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American Journal of Hospital Pharmacy

American Society of Hospital Pharmacists

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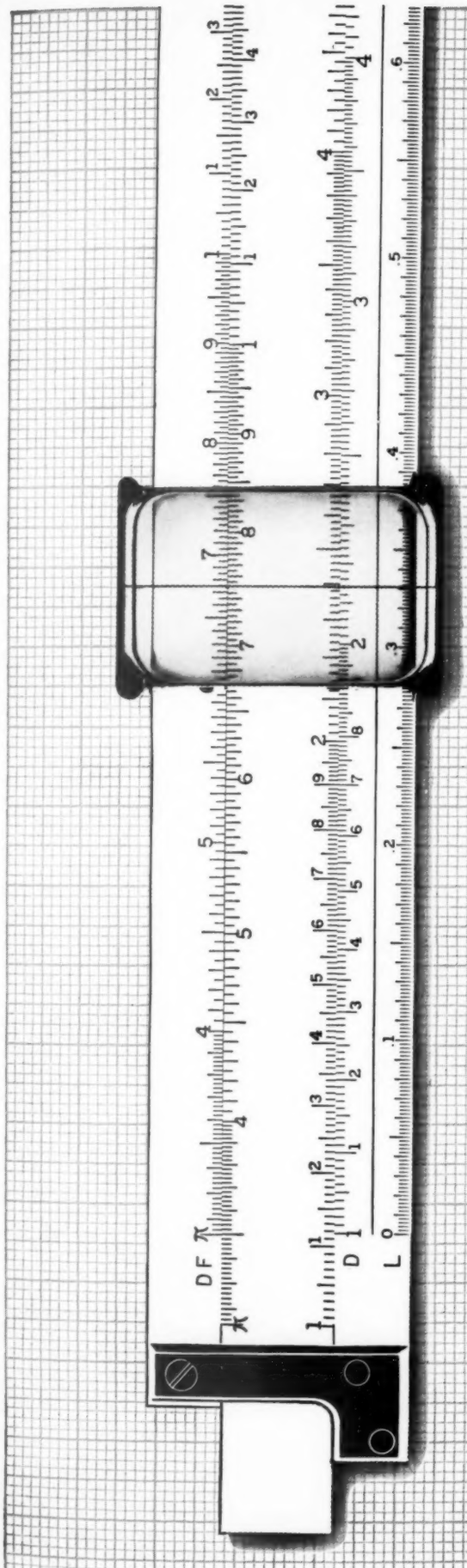

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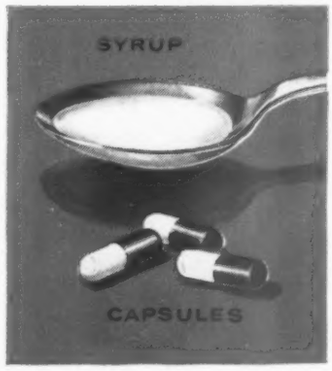

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as the president sees it—

ROBERT C. BOGASH, *Lenox Hill Hospital, New York City*

► AS THE YEAR PROGRESSES, MORE PROFOUND BECOME THE PROMISES of Leo Godley and the advice of George Archambault. Leo promised that this year would be an educational experience, the likes of which I had never seen. George counseled to keep my luggage nearby and laden with wash and wear garments of all varieties. Both were correct, almost if not directly, to a point of understatement.

During the past week I have had occasion to visit with the Galveston-Houston Chapter, the Oklahoma State Chapter, and have only this morning left the Utah State Chapter enroute to the Philadelphia Institute and then on to Atlantic City and the Catholic Hospital Association's Annual Meeting.

Having been made an honorary Texan several years ago it seemed fitting that my first visit with a local Chapter should be in Texas and it was Galveston, to be exact. What great changes have been made in so few years! The progress in continually upgrading the practice of pharmacy in hospitals and patient care is a direct manifestation of the professional interest, drive, and personality of the members of the Houston-Galveston Chapter. The interest and cooperation of the Deans Burlage, Ferguson, and Jones is another significant bind to further broadcast hospital pharmacy progress.

Despite excessively warm weather we had an excellent turnout with representation from as far north as Dallas in the person of Charles Henry. After an open house tour of the Galveston Medical Branch, University of Texas, Bob Lantos' bailiwick, there followed a buffet luncheon and for me, at least, an enjoyable informal discussion.

Once in Oklahoma I was immediately under the protective custody of Sister Teresa's two deputies, by name, Del Briggs, Area Pharmacy Officer, Bureau of Indian Affairs, and Joe Davis of the Veterans Administration Hospital. Squired by these two emissaries we were able to visit several hospitals. Through the courtesy and kindness of Sister Teresa, the Oklahoms State Chapter met in St. Anthony Hospital's new spaciously modern auditorium. Issues of vital interest to hospital pharmacy's future were raised by this group and are worthy of future exploration. This is a fertile area to consolidate the pattern for modern hospital pharmacy service and spread the gospel through and to administrators and State Boards of Pharmacy. It is reassuring to know that there are present here practitioners like Del Briggs and Sister Teresa—true bell weathers.

Having just left Salt Lake City several hours ago I cannot help but dwell on last evening's meeting with the Utah State Chapter. Under the capable and dynamic guidance of Nellie Vanderlinden and President Tom Marshall, we visited as many hospitals as the schedule allowed. Most impressive to me, and I am certain a true sign of this Chapter's vitality, is that every practicing hospital pharmacist in Utah attended the meeting. We had a marvelous meeting that went long over the regular limit. A real tribute to this live Chapter and a credit to the constant ministering efforts of all its members—particularly Tom Marshall, Mrs. Van as she is called in Salt Lake City, and the effervescent Sister Rebecca who came in from Ogden.

Is it no wonder then that the ASHP continues to grow and further infuse in us a respect and sense of reward for the individual and group effort?

It is heartening to notice the great interest shown by administrators in the *American Hospital Formulary Service*. More than once administrators to whom we have spoken and further explained the Service have requested their chief pharmacists to maintain their established formulary systems status quo until the fall when most Pharmacy and Therapeutics Committees reconvene. These administrators have voiced the intention of utilizing the SOCIETY's new Service. Even those who did not commit themselves implied that they would use the *Formulary Service* as soon as their budgets permitted.

The future of this Service looks quite promising, from observations made in my travels.

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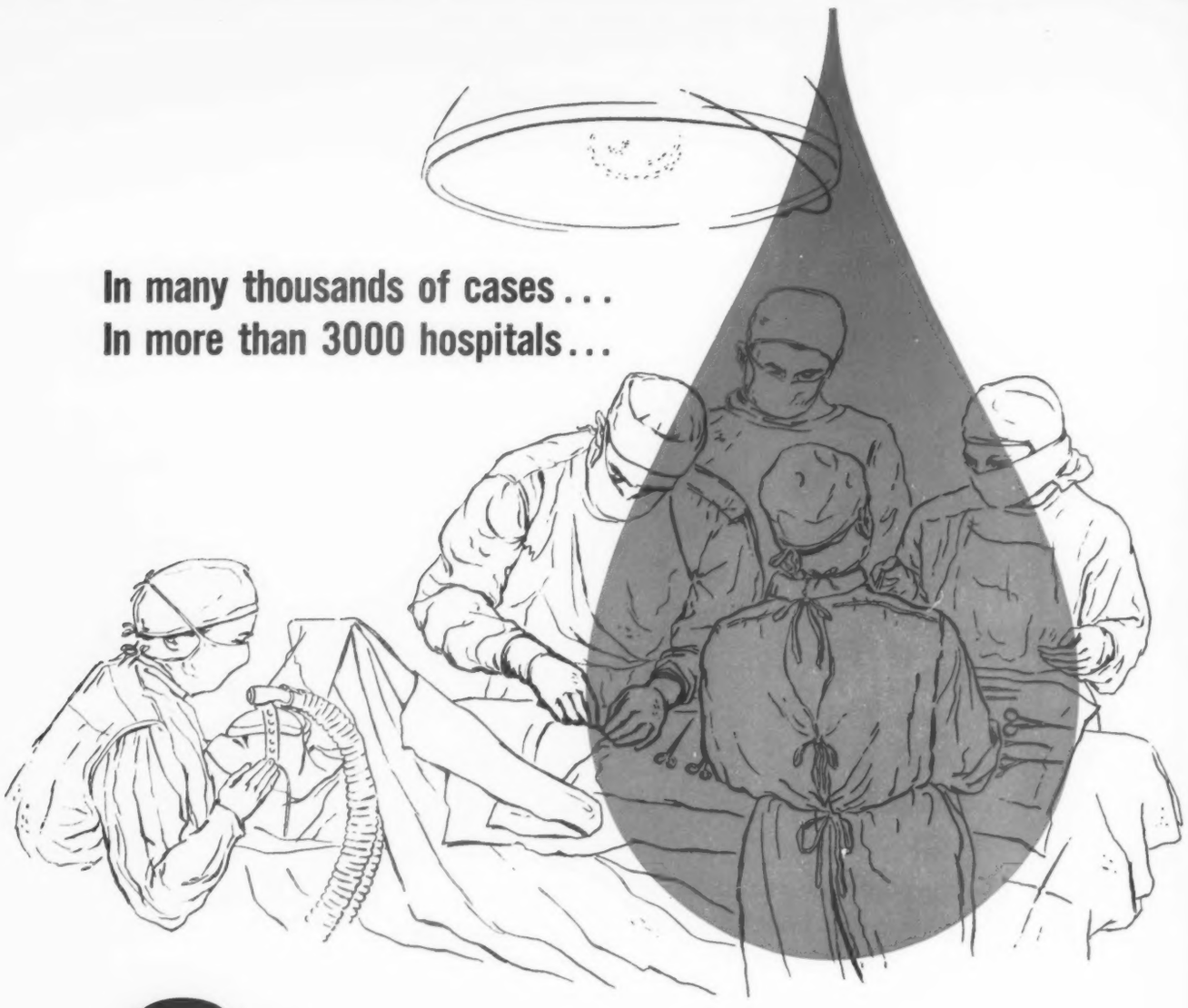

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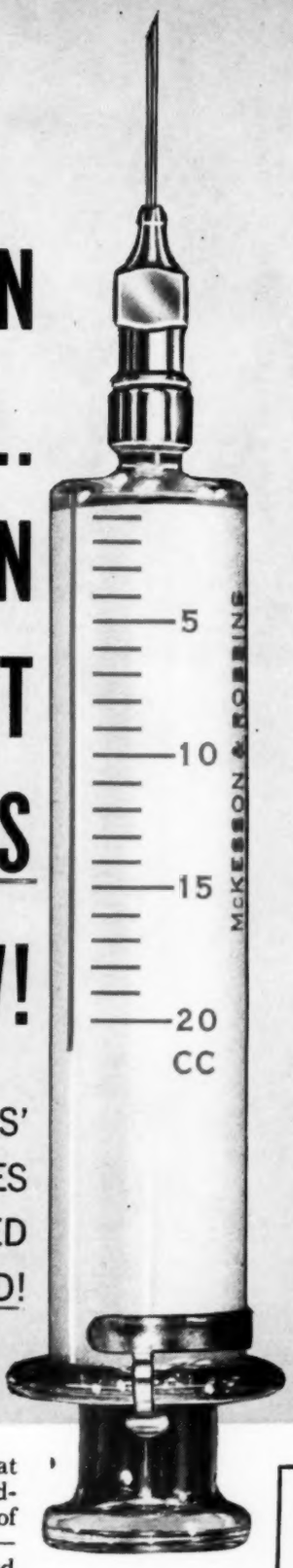

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News

Action of A.H.A. Board of Trustees

Dr. Edwin L. Crosby, Director of the American Hospital Association, has recently notified the ASHP Secretary regarding the following actions taken by the A.H.A. Board of Trustees at its May 13 meeting.

Suggested Regulations for Handling Narcotics in Hospitals

"To approve the Suggested Regulations for Handling Narcotics in Hospitals formulated by the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS; further,

"To bring the suggested regulations to the attention of hospitals by appropriate means, and preferably through publication in Hospitals, Journal of the American Hospital Association."

American Hospital Formulary Service

"To approve in principle the hospital formulary service of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS; further,

"To bring this service to the attention of member hospitals of the American Hospital Association; further,

"To request the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS to change the name of the service from American Hospital Formulary Service to Hospital Formulary Service."

Investigational Drugs

"To add the following question to the Guide for the Inspection of a Hospital Pharmaceutical Service: 'Have procedures been established for the control of investigational drugs, if used? Yes..... No.....'; further,

"To transmit the additional question to the Joint Commission on Accreditation of Hospitals for its consideration and possible use."

Oregon Pharmacists Learn Radioisotope Technique

A course in radioisotope handling, designed to meet the training requirements of the Atomic Energy Commission, will be offered to Portland, Oregon, hospital pharmacists late this month. The announcement was made at a recent meeting of the Oregon Society of Hospital Pharmacists by James B. Low, Assistant Chief Pharmacist, U. S. Veterans Administration Hospital, Portland. Mr. Low said that Dr. Arthur Livermore and Dr. Arthur Scott, both radioactivity consultants and on the staff of Reed College, Portland, will give the course consisting of six two-hour sessions.

Included in the classes will be such topics as fundamentals, calculations, and techniques of handling radioactive substances, the pharmacy spokesman added.

"We believe that this course in handling radioisotopes is the first one ever to be offered on the West Coast, and possibly among the first exclusively for pharmacists in the entire nation," Mr. Low declared.

Hospital Pharmacists Receive Certificates

On completion of a seven week course in Hospital Work Simplification, certificates were presented at Jefferson Medical College Hospital. Left to Right,

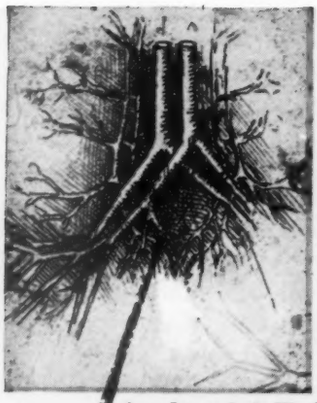
Sister M. Wendoline, Nazareth Hospital, Howard Hoffman, Resident Administrator, Philadelphia Veterans' Administration Hospital, John Nelson, Assistant Director, Jefferson Medical College Hospital, Philadelphia, Alonzo Sudler, Director Pharmacy Service, Abington Memorial Hospital, Abington, Penna., Sister M. Gentilla, Director Pharmacy Service, Nazareth Hospital, Peace Paubionsky, Biochemist Abington Memorial Hospital, Olie Bell, Industrial Engineer, J. W. Landenberger & Co., who presented the course, Fred Salfi, Resident Pharmacist, Charles King Jr., Resident Pharmacist, Frank Fus, Control Pharmacist, Herb Carlin, Resident Pharmacist of Jefferson Medical College Hospital.

Historical Awards in Hospital Pharmacy

Two hospital pharmacists who make a contribution toward either preserving or interpreting the historical records of hospital pharmacy will receive a recognition certificate and a gift membership in the American Institute of the History of Pharmacy, at the 1959 meeting of the SOCIETY in Cincinnati. The two recipients will be chosen from those entering a competition being sponsored jointly by the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS and the American Institute of the History of Pharmacy, it has been announced by Miss Adela Schneider of Houston, Texas, Chairman of the SOCIETY's Committee on Historical Records.

Interested pharmacists are urged to begin work now on either of two types of projects:

1. Investigate some historical topic and submit a manuscript concerning it. Examples of suitable topics would be the history of your hospital; the history of your hospital pharmacy; the biography of an outstanding hospital pharmacist, notable either locally or nationally; or the history of a particular idea, practice, or organized activity.
2. Collecting, identifying and classifying printed and manu-



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script documents and also pictures on some facet of hospital pharmacy (as in No. 1 above), for deposit with some library or organization for later use in historical writing concerning hospital pharmacy. This type of entry in the competition may be either submission of the collection itself, or a detailed description of the collection with a statement concerning the place of deposit.

Miss Schneider points out that entries will be judged primarily on the basis of the freshness of the topic and the competence with which the project has been explored and presented. Hospital pharmacists away from large cities with the best libraries have equal opportunity by exploring some segment of local history.

The American Institute of the History of Pharmacy recommends as a practical manual, "Local History: How to Gather It, Write It, and Publish It," by Donald Dean Parker (New York, 1944, 186 pages; $1), which is available from the Social Science Research Council, 230 Park Avenue, New York 17, New York. A pamphlet titled "Some Bibliographical Aids for Historical Writers in Pharmacy" has been prepared by the American Institute of the History of Pharmacy, in collaboration with the SOCIETY's Committee on Historical Records; and a copy will be sent to anyone in the SOCIETY requesting it from the Institute headquarters office, 356 Chemistry Building, Madison 6, Wisconsin.

Members of the SOCIETY are asked by Miss Schneider to submit their entries in the competition by December 1958.

Bender Receives Honorary Degree

George A. Bender, originator and editor of the History of Pharmacy series of paintings for Parke, Davis & Company, was awarded an honorary Doctor of Science degree by South Dakota State College at commencement exercises on June 2.

H. M. Crothers, acting president, said that Bender's "record in the field of pharmacy clearly makes him one of our most distinguished graduates."

Bender, who graduated from South Dakota in 1923, "is regarded as one of the nation's outstanding figures in pharmaceutical journalism."

Born at Osseo, Wis., in 1904, Bender moved to South Dakota in 1907, and attended elementary and high schools at Webster. He was graduated in pharmacy from South Dakota State and then served six years as a retail pharmacist. He was editor of the North Western Druggist from 1929 until 1933, then became editor of the National Association of Retail Druggists Journal. In this position he assisted in campaigns for legislation which would be beneficial to the profession of pharmacy, such as the Robinson-Patman and Tydings-Miller acts. After working briefly for the U. S. Department of Commerce, Bender became service editor of *American Druggist* in 1946, a position he held until he joined Parke, Davis in 1947 as the editor of their pharmacy publication and later became manager of retail sales promotion. Bender is now assistant director of institutional advertising.

Bender conceived and directed the 40-painting series, A History of Pharmacy In Pictures, which are authentic reproductions that trace the rich heritage of pharmacy from before the dawn of civilization to the present day. Sponsored by Parke, Davis, the paintings have come to be considered a major contribution to the pharmaceutical field. A similar series, A History of Medicine In Pictures, now is under way.

Bender is a member of the American and Canadian Pharmaceutical associations; several state pharmacy groups; three Provincial associations; Past President of the American Institute of the History of Pharmacy; and numerous other civic and social groups. He resides at 566 Barrington, Grosse Pointe Park, Mich.

V.A. Hospital Pharmacy Residents Awarded Certificates

Herman L. Coffman and Anthony B. Monteleone have completed the joint program of graduate study at The St. Louis College of Pharmacy and Allied Sciences, receiving the Master of Science Degree and completing the Residency in Hospital Pharmacy offered by The V. A. Hospital, St. Louis, Missouri.

Shown, left to right, at the award cermony are N. E. Hammelman, Chief Pharmacy Service; Anthony B. Monteleone, Resident; Herman L. Coffman, Resident,; and John W. Claiborne, M.D., Manager.

Pharmacists for VA Wanted

The U. S. Civil Service Commission has announced an examination for filling pharmacist positions paying $4,525 a year. The jobs are located in Veterans Administration hospitals and regional offices throughout the United States, its Territories and possessions.

No written test is required. To qualify, applicants must have completed appropriate education in an approved school of pharmacy, and be currently registered as a pharmacist in one of the States or Territories of the United States, or in the District of Columbia.

Applications will be accepted until further notice and must be filed with the Executive Secretary, Central Board of U. S. Civil Service Examiners, Veterans Administration, Washington 25, D. C.

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News

Godley Accepts New Position

Leo F. Godley, formerly Chief Pharmacist at the Bronson Methodist Hospital, Kalamazoo, Michigan, has accepted the post as chief pharmacist at Harris Hospital, Fort Worth, Texas. Mr. Godley assumed his new position July 1. A native of South Carolina, Mr. Godley is also the Immediate Past President of the SOCIETY. He was graduated from the University of South Carolina in 1939 and later attended Western Reserve University where he received a Master of Science degree with a major in hospital pharmacy. He also completed an internship in hospital pharmacy at University Hospitals in Cleveland.

Mr. Godley has served successively as staff pharmacist at Columbia Hospital in Columbia, South Carolina; chief pharmacist at Norfolk General Hospital in Norfolk, Virginia; and chief pharmacist at New York University Clinic in New York City. Concurrently with the latter position, he carried an appointment as instructor in therapeutics on the faculty of the college of medicine. Mr. Godley is a member of Rho Chi.

Mr. Godley has contributed to the literature of hospital pharmacy and has served on the editorial staff of the *Journal of the American Pharmaceutical Association* and the AMERICAN JOURNAL OF HOSPITAL PHARMACY. For several years he edited Therapeutic Trends, a section published regularly in the latter publication. He has served on various ASHP committees and as Secretary and President of the SOCIETY. He was a representative of the ASHP on the Policy Committee of the Division of Hospital Pharmacy in 1948 and has been reappointed to this post for 1958-1959.

► DR. HAMID ABDUL GHANI YAHYA of Bagdad, Iraq, is spending approximately six months in the United States observing hospital pharmacy practice and visiting pharmaceutical manufacturing laboratories. Dr. Yahya is the pharmacist in charge of the medical health services, Ministry of Health, Bagdad. His visit

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*Obtained from metabolic conversion of acetate ion.

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Calcium	5 mEq.		
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► MR. RAFAEL A. MONTERO has completed a nine month period of observation and training in hospital pharmacy at the University Hospital, University of Michigan, in Ann Arbor. Mr. Montero is the Director of Pharmacy Service for the Caja de Seguro Social Hospital in San José. Mr. Montero's training was sponsored by the Government of Costa Rica, the International Cooperation Administration, and the United States Public Health Service. Upon his return to San José, Mr. Montero will establish a central pharmacy to prepare and provide medicines for the various hospitals included in the new program for hospital improvement and development being undertaken in Costa Rica.

► ANALES DE FARMACIA HOSPITALARIA is the name of a new publication issued three times a year by the hospital pharmacists of Madrid, Spain. The first issue appeared in December, 1957, and contained 66 pages of professional and scientific articles devoted to various aspects of hospital pharmacy and related subjects.

Johnson Promoted at Bronson Hospital

Mr. William Johnson, formerly Assistant Chief Pharmacist at Bronson Methodist Hospital in Kalamazoo, Michigan, has been promoted to the position of Chief Pharmacist. In his new position Mr. Johnson succeeds Mr. Leo F. Godley.

Mr. Johnson, a native of Greenfield, Indiana, is a graduate of Purdue University School of Pharmacy. He has had experience in both retail and hospital pharmacy and was employed by the Panama Canal Company as a pharmacist from 1949 to 1953. Since 1953, Mr. Johnson has been associated with the pharmacy department at Bronson Methodist Hospital.

Mr. Johnson is a Contributing Editor of the AMERICAN JOURNAL OF HOSPITAL PHARMACY for which he prepares the section entitled Therapeutic Trends.

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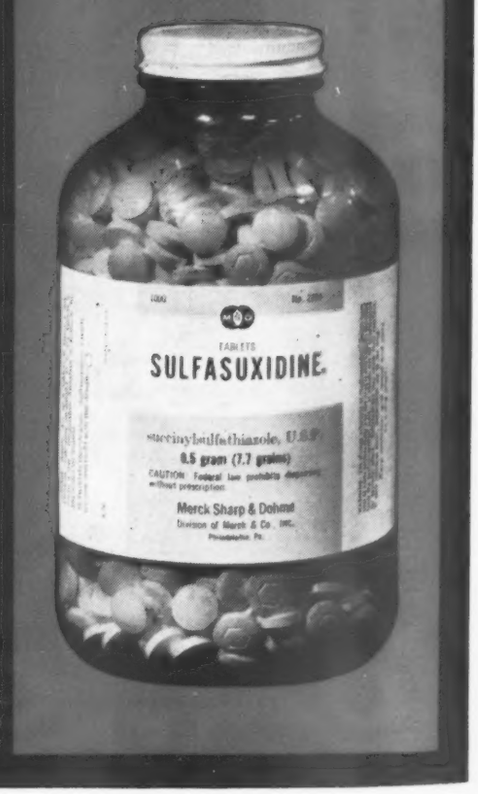

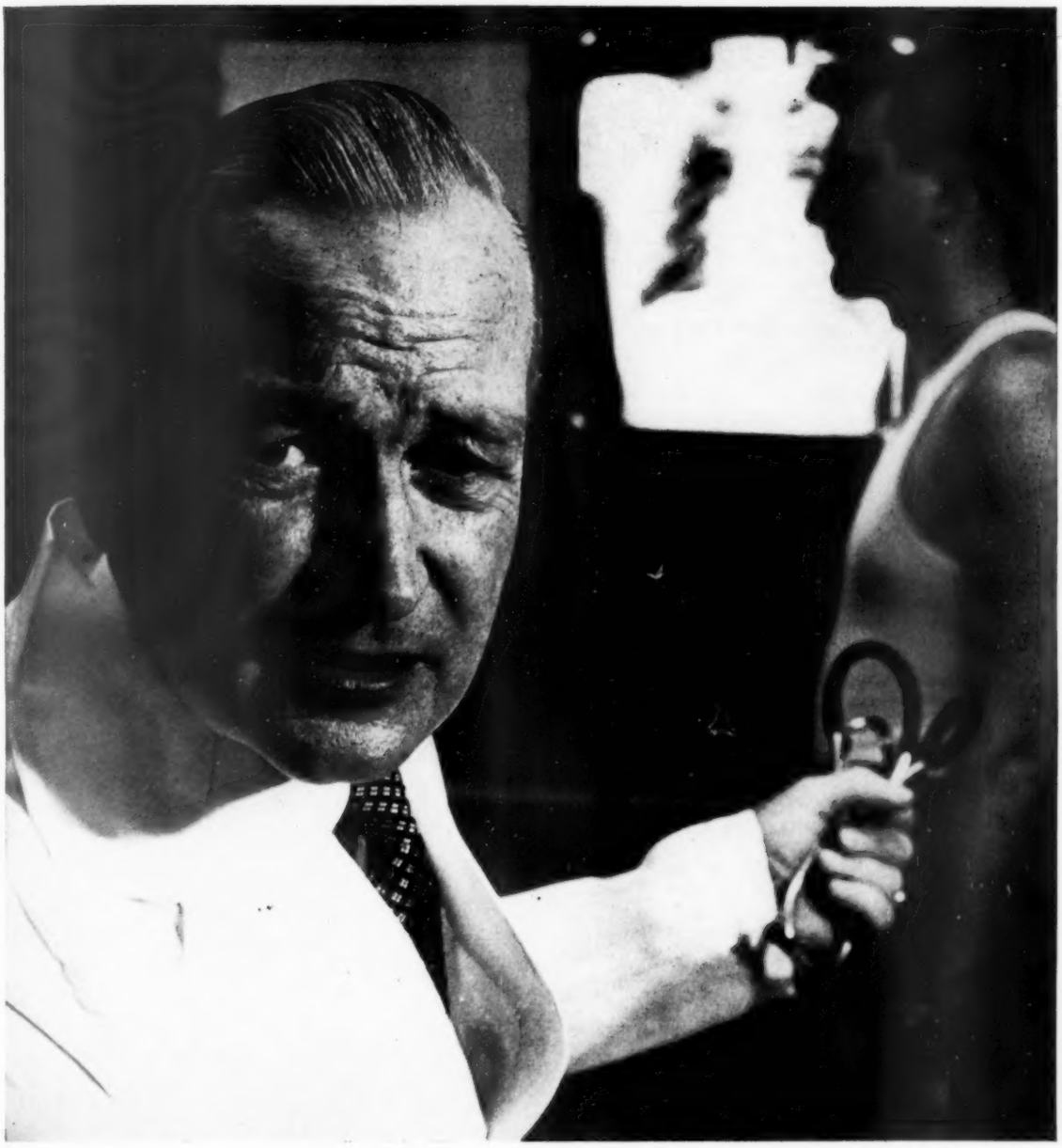

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Southeastern New York Chapter

The Southeastern New York Chapter of the ASHP met at Lenox Hill Hospital, New York City, February 13 and March 27. President Harold Neham presided at both meetings. A discussion of "Physical Compatibilities of Some Intravenous and Intramuscular Admixtures" was presented by Mr. Robert Bogash at the February meeting.

At the March meeting, Mr. Robert Bogash reported on the proposed Seminar on Hospital Pharmacy Administration to be sponsored by the Southeastern Chapter and the Greater New York Chapter. Both the New Jersey Chapter and Northeastern New York Chapter, Mr. Bogash reported, were interested in a similar type of program and the possibility of expanding the scope and sponsorship of the Seminar to include these two Chapters was being considered.

Mr. Bogash also reported on a recent meeting held in Albany concerning the practice of pharmacy in hospitals. Present at the meeting was a committee of the New York State Board of Pharmacy and representatives from each of the five ASHP chapters located in the state. Various problems of pharmaceutical interest concerning hospitals were discussed.

Newly elected officers installed included Mr. Norman Baker, *President*; Mr. Lowell Pfau, *Vice-President*; Mr. Albert Kossler, *Secretary;* and Miss Goldie Goldman, *Treasurer.*

Southern California Society

The April 10 meeting of the Southern California Society of Hospital Pharmacists was held in the College of Nursing Auditorium with 65 members and guests in attendance. Treasurer Wendell Hill reported $1772.12 in the treasury. President Joseph Beckerman proposed that selected students be accepted as associate members.

The Chapter voted to donate $150 to $300 for the reception to be given members of the ASHP at the annual convention in Los Angeles.

It was voted to send members delinquent in dues three notices before they are dropped.

Dr. Clarence H. Albough presented a travelogue on Greece, illustrated by colored slides. Miss Mieco Nakemura, staff pharmacist at St. Vincent's Hospital, spoke on chlorothiazide (Diuril).

Nebraska Society

The officers and several members of the Nebraska Society of Hospital Pharmacists attended the pharmacy section of the Midwest Hospital Association Convention in Kansas City, March 24 and 25.

The April meeting was held in conjunction with the Creighton University College of Pharmacy Seminar, consisting of three lectures: 1. The Profession and Public Morals, by Father John J. Foley, S. J. 2. Steroid Antiphlogistic Compounds in the Treatment of Allergic Disorders, by Dr. Edward H. Grinnell. 3. General Adaptation Syndrome and Modern Modifications, by Dr. Theodore Urban.

Texas Society

The Texas Society of Hospital Pharmacists met in Austin February 14 and 16 in connection with the Texas Seminar. President Fred Borth presided.

Mr. James McKinley was selected as delegate to the ASHP Convention in Los Angeles. Miss Adela Schneider and Mr. Cedric Jeffers were appointed to serve as alternates. One hundred dollars was appropriated to be used for the expense of the delegate.

Copies of the History of the Texas Seminars on Hospital Pharmacy were distributed to the members. The history was written by Dr. Lofgren, Louise Pope and Adela Schneider.

Several questions concerning active, associate and student membership were raised. Dr. William Heller pointed out that a hospital pharmacist must belong the the A.Ph.A. and the ASHP to have active membership in a local Chapter. Other than hospital pharmacists may become associate members of the local Chapter by first joining the national groups, the A.Ph.A. and ASHP.

Mr. Herbert Flack and Mr. Daniel Moravec were awarded Honorary Memberships in the Texas Society of Hospital Pharmacists by Mr. Kenneth Tiemann, Membership Chairman.

The Texas Society voted to donate an additional $25.00 to the A.Ph.A. Building Fund.

Mr. James McKinley was installed as the new President by Mr. Herbert Flack. President McKinley urged members to join and participate in activities of state and local pharmaceutical associations. He then appointed the following committees: *Program and Public Relations.* Charles Henry, Chairman; Guy Kelly, Fred Borth, Louise Pope; *Membership.* Blanche Groos, Chairman; Henry Beard, James Beran, Doris Smith and John Freels; *Constitution and By-Laws Revision.* William Heller, Chairman; Adela Schneider, Lewis Smith.

Midwest Association of Sister Pharmacists

The March 11 meeting consisted of a Seminar on Hospital Pharmacy held jointly with the Illinois Society of Hospital Pharmacists at the Windermere Hotel. The Seminar is sponsored by Pfizer Laboratories.

At the April 17 meeting, Mr. Alfred Mannino, Hospital Manager of McKesson and Robbins, spoke on the purchasing of drugs by direct and indirect methods and also discussed some recent plans for pharmacy cabinets and fixtures.

Tenth anniversary meeting of the Midwest Association of Sister Pharmacists

Oklahoma Society

The Oklahoma Society of Hospital Pharmacists held a meeting in Oklahoma City February 20 at which a panel discussion was presented. The meeting was called to order by

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President Ralph E. Reed. Members of the panel on hospital pharmacy problems included: Dr. Ralph W. Clark, Dean of the College of Pharmacy, who served as moderator; Mr. J. W. Shrode, Administrator of Wesley Hospital; Dr. L. J. Starry, Chief of Staff of St. Anthony Hospital; Miss Marguerite Jones, Chief Pharmacist at Hillcrest Hospital, Tulsa; Mr. Robert McKay of the U.S.P.H.S. Indian Hospital in Shawnee; and Mr. Conrad Masterson, retail pharmacist and Past-President of the American College of Apothecaries.

The March 19 meeting was devoted to a discussion of "Hospital Pharmacist - Pharmaceutical Representatives Relations." Mr. Stokes E. Baggett of the V. A. Hospital served as moderator. Members of the panel included Mr. Frank E. Cotten of G. D. Searle, District Manager of Oklahoma City; Mr. Howard A. Dickens of Wyeth Laboratories, District Manager of Oklahoma City; Mr. William Cates of E. R. Squibb and Sons; and Mr. Dan Reardan of Abbott Laboratories.

The Oklahoma Society voted a contribution of $15.00 to the Building Fund of the A.Ph.A.

The principal speaker at the March 19 meeting was Mr. Dan L. Clemons, Chief Pharmacist of the Valley View Hospital in Ada, who spoke on "Some Professional and Business Aspects of Hospital Pharmacy."

Mr. E. R. Weaver, Secretary of the Oklahoma State Pharmaceutical Association, invited the members of the Oklahoma Society to again meet with the State Association, as in the past five years. His invitation was accepted and the date of the meeting was announced as May 13, 14, and 15, with a joint luncheon scheduled for May 14.

Ohio Society

The Ohio Society of Hospital Pharmacists met in conjunction with the Ohio Hospital Association in Cincinnati March 10 to 13. Sister M. Florentine presided over the meetings. Speakers included Mr. Paul Parker, Director of the Division of Hospital Pharmacy, who spoke on "Hospital Pharmacy of the Future;" Mr. Burns Geiger, of Pfizer Laboratories who discussed "Effective Communications for Hospital Pharmacists;" Col. J. Gould, Director of the Ohio Valley Civilian Defense Authority, who stressed "The Pharmacists' Role in Civilian Disaster Programs;" Dr. Sol Taplitz of the Jewish Hospital, Cincinnati, discussed "Radioactive Isotopes and the Hospital Pharmacist;" Mr. Darrell L. Gifford, Technical Products Division of American Sterilizer, explained "Why the Hospital Pharmacist Should Make Parenteral Solutions;" Dr. Joseph Kowalewski told of "The Hospital Pharmacists' Role in Education;" Sister Mary John, Chief Pharmacist at Mercy Hospital, Toledo, explained "How Small Hospitals Can Expand Bulk Manufacturing Programs;" and Mr. Otto E. Lynch, Chief Pharmacist of Blanchart Valley Hospital, Finley, spoke on "Nontoxic Adhesive Removers."

Officers of the Ohio Society of Hospital Pharmacists for the coming year are: Jack Smittle, *President;* Jack Hovis, *Vice-President;* Theodore Mink, *President-Elect;* Sister Margaret Mary, *Treasurer;* and Sam Arlow, *Secretary.*

Western Pennsylvania Society

The annual banquet of the Western Pennsylvania Society of Hospital Pharmacists was held on May 5 at the Carlton Hotel in Pittsburgh with Pfizer Laboratories as host. Mr. Burns Geiger of Pfizer stressed the need for teamwork between the practicing members of the health professions and the pharmaceutical industry. President Wolf then presented a brief resume of the proceedings of the Los Angeles Convention.

The April 16 meeting was held at St. Francis General Hospital and Rehabilitation Center where members toured the Psychiatric Department and then heard a talk by Dr. Norton Jokan, Director of Psychiatry and Neurology.

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Louisiana Society

A banquet was given at Arnaud's Restaurant in New Orleans for the installation of new officers of the Louisiana Society of Hospital Pharmacists on May 20, 1958. The new officers to serve during the coming year are *President,* Joseph P. Crisalli; *Vice-President,* Frank W. Hollister, both of the U. S. Public Health Service Hospital of New Orleans; *Treasurer,* Herbert Mang of the Ochsner Foundation of New Orleans; and *Secretary,* Gladys Hebert, Charity Hospital of New Orleans.

Akron Area Society

The May 13 meeting of the Akron Area Society of Hospital Pharmacists was held at Ohio Valley Hospital, Steubenville.

President Mink appointed Mrs. Jeanne Sickafoose of Canton Aultman Hospital as Regional Director to the Ohio Society of Hospital Pharmacists.

Charts of "Emergency Disaster Supplies" were distributed. These consist of charts showing the quantities of 14 emergency drugs which are available in each of the 18 area hospitals.

The Constitution and By-Laws were amended.

The following officials were elected: Irene Knepp, *President;* Paul Dickerson, *Vice-President;* Robert P. Baird, *Secretary;* and Margarete Acebo, *Treasurer.*

The speaker for the evening was Mr. Joseph Kuczynski of the Cleveland office of the Bureau of Narcotics.

North Carolina Society

Committee members of the North Carolina Society of Hospital Pharmacists include: *Program and Public Relations,* Virginia Caudle, Chairman, Claude Paoloni and William W. Taylor; *Membership,* Claude Paoloni, Chairman, H. G. Price, A. J. Darling, and Shirley Mikeal; *Publicity,* I. T. Reamer, Chairman, James W. Mitchener, Jack Rodgers, Margaret Gretz, and Myrtle Kraus; *Projects,* Frank Lowder, Chairman, Gilbert Colina, Edgar L. Riggsbee, Rudy W. Hardy, and J. Coit Wright; *Historian* Nell Evans, and Cecil I. James.

The following Society members participated in the N.C. P.A. convention held recently in Durham: James Mitchener, Cabarrus Memorial Hospital, and Claude Paoloni, Moses H. Cone Memorial Hospital, who led discussions in the Creative Ideas Conference. Dr. William Taylor presented a talk entitled "The Dental Formulary." I. T. Reamer and Gerald M. Stahl were on the Executive Planning Committee.

The next Quarterly meeting of the Society is scheduled for June 28 in Ashville.

Northern California Society

The 114th meeting of the Northern California Society of Hospital Pharmacists was held Tuesday, April 8, at Alameda Hospital, Alameda. President Mathilde Herby called the meeting to order. Jessie Lavender introduced the guest speaker, Dr. John O. Beatty, Staff Physician, Fairmont Hospital. Dr. Beatty spoke on "Some Problems in Space Medicine." Problems encountered in travel into space were: pressure, nutrition, waste, depressurization, vaporization, acceleration orientation, radiation, and flight difficulties. A question and answer period followed.

Ed Madden, intern pharmacist at the USPHS Hospital in San Francisco, presented a talk on "Pharmacy and Therapeutic Committee and Its Role in PHS Hospitals." The

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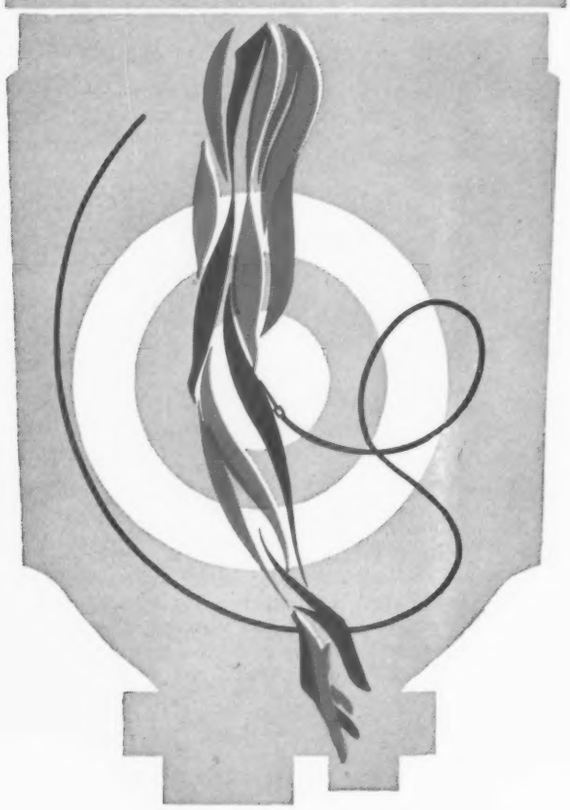

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committee membership and duties were discussed. Drugs in the formulary were classified as:

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Mr. Madden explained how a drug is admitted to the formulary and how a request for emergency drug is filled. A question and answer period followed, and the pro and con of the use of generic names and drug duplication were discussed.

The 115th meeting of the Northern California Society of Hospital Pharmacists was held Tuesday, May 13, 1958 at the Southern Pacific Hospital, Harness Hall, San Francisco. President Mathilde Herby called the meeting to order. Francis Spinelli, Chief Pharmacist, Southern Pacific Hospital, introduced the guest speaker, Dr. William Dowling, specialist in internal medicine and member of the staff of Southern Pacific Hospital. Dr. Dowling's subject was "Blood Dyscrasia, Secondary to Present Day Medication." Dr. Dowling listed new drugs which causes blood dyscrasias, and described mechanisms causing such dyscrasias, and treatment.

Francis Spinelli reported on the Association of Western Hospitals' Convention. The Pharmacy Section breakfast meeting was well attended as was the pharmacy display consisting of apothecary jars and a capsule guessing contest.

Eric Owyang, delegate to the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS' convention, presented his report of the convention. Highlights of the national meeting were the panel on Current Developments in Hospital Pharmacy, papers on Membership, Safety Procedures, Hospital Formulary, and Economic Poisons.

President Herby elaborated on the Membership Report of the ASHP convention and the Bulk Formulary. The President called on several members who also attended the convention for their comments.

The President announced the Executive Board's recommendation that the Society hold meetings during the summer. Edward Madden moved, seconded by Clara Henry, that meetings be continued during the summer months. The motion was passed.

Francis Spinelli reminded the members of the dinner dance to be held May 17 honoring University of California College of Pharmacy seniors.

Flack Ends Tenure as Officer At Philadelphia

Nazareth Hospital in Philadelphia was the host for the final meeting of the Greater Philadelphia Hospital Pharmacists' Association for 1957-58. President Herbert L. Flack for the last time of the year presided over the meeting.

The aggregate committees of the Association gave their final reports after which President Flack presented his outgoing address. After paying respects to the members deceased in the past year, President Flack reflected upon the past year's accomplishments. The Association was instrumental in sponsoring again a parenteral products and a radioisotope technics course at the Philadelphia College of Pharmacy and Science. The Accidental Poisoning Talks series got in full swing at the turn of the year, 1958, with over thirty-five talks given by members to small community groups, totaling over 1,000 persons covered to date. For the fourth year, the Association cooperated with the Society for Advancement of Management (Philadelphia Chapter) in presenting a Hospital Work Simplification course. Plant tours to Smith, Kline and French Laboratories, Ciba Pharmaceutical Products Company, Roche Laboratories, and National Drug Research Laboratories were attended by the membership. The Association cooperated with local pharmaceutical organizations in sponsoring The Philadelphia Pharmacy Forum. Four delegates attended the annual meeting of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS in Los Angeles. A 20th Anniversary Year celebration banquet was held the night of May 17th at the Celebrity Room in Philadelphia. Plans are well in progress for the Institute on Hospital Pharmacy to be held on the campus of Temple University in June, with the Association to be host. The active membership has been increased to 124. Members were reminded to take care in choosing their source of buying pharmaceuticals by not "compromising quality of products for a few dollars in reduction of cost."

The Greater Philadelphia Hospital Pharmacists' Association Officers for 1958-59 are President Joseph D'Ambola, Director of Pharmacy Service, Hahnemann Medical College Hospital (Fourth from left), Vice-President Joseph Desiderio, Director of Pharmacy Service, Delaware County Hospital, Drexel Hill, Penna. (First on Left), Recording Secretary, Miss Frances Aversa, Staff Pharmacist, Pennsylvania Hospital in Philadelphia (Fifth from left), Treasurer, Miss Estelle Fairman, Assistant Director, Pharmacy Service, Lankenau Hospital, Philadelphia (sixth from left). Also shown are: Herbert Flack, Director of Pharmacy Service, Jefferson Medical College Hospital, Outgoing President (third from left) and Miss Miriam Russell, Director of Pharmacy Service, University of Pennsylvania Hospital, Outgoing Secretary.

The results of the election for the Association officers for 1958-59 were announced.

After two successful years, Mr. Flack turned over the president's gavel to Mr. D'Ambola. A certificate of merit for outstanding services performed on behalf of the Association was presented to Past-President Flack.

The hospitality at Nazareth Hospital excelled as usual with serving of an excellent buffet snack and beverages to close the evening.

Dade County Society

The Dade County Society of Hospital Pharmacists held their annual banquet on Tuesday evening, June 17, at the Biscayne Room of the McAllister Hotel, Miami, Florida. McKesson and Robbins sponsored the dinner and everyone enjoyed the evening very much.

Two representatives from the Dade County Society attended the Institute on Hospital Pharmacy in Philadelphia: Miss Jeanette Hunter, St. Mary's Hospital, West Palm Beach, and Mr. C. Dell, Jackson Memorial Hospital, Miami.

In May the members of the Dade County Society attended the sessions of the Southeastern Conference at Miami Beach, Florida.

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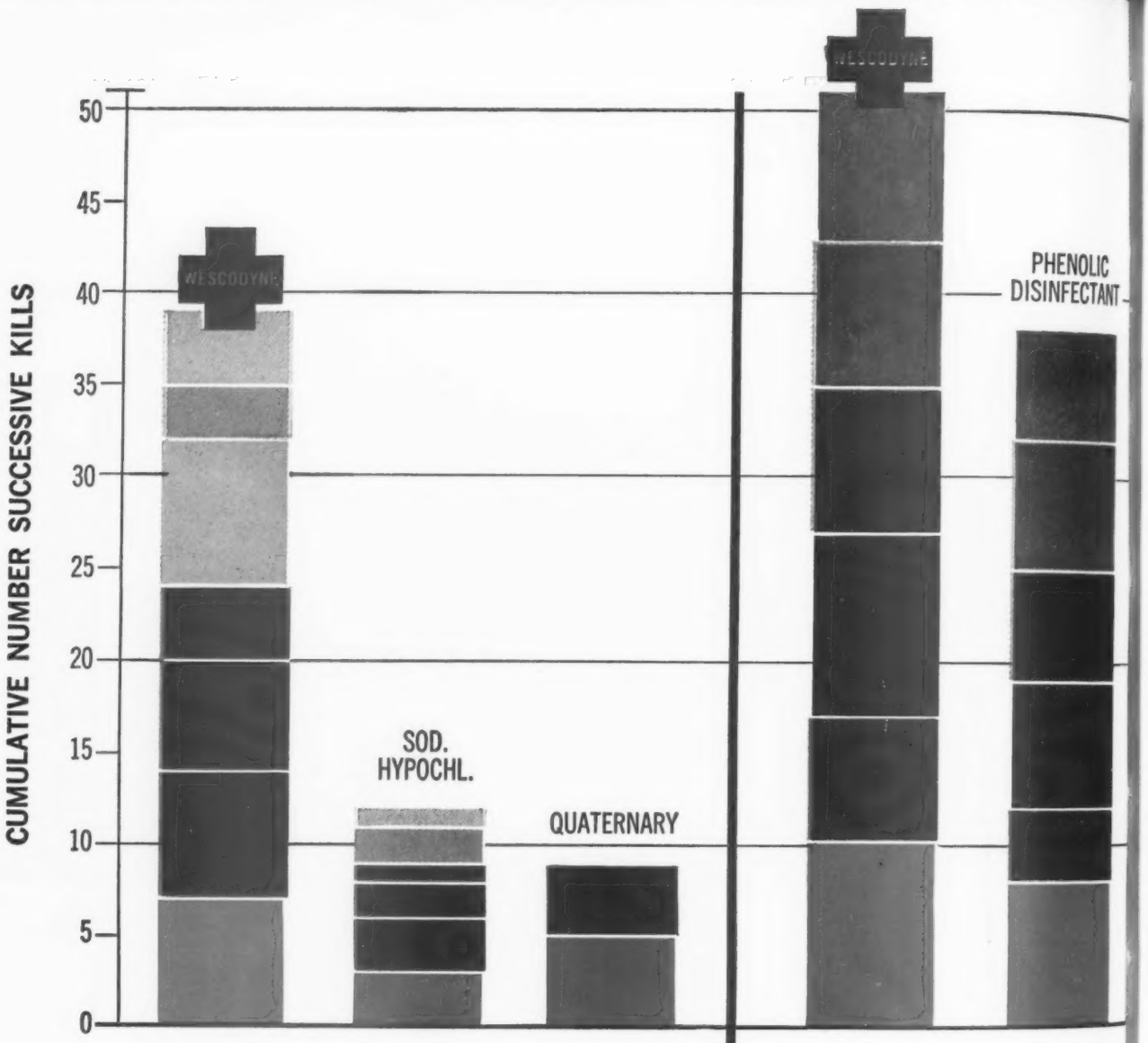

Capacity Test for Germicidal Action. (A. Cantor and H. Shelanski as described in Soap and Sanitary Chemicals, February 1951.) **Explanation:** This method essentially consists of adding to the use-dilution of the disinfectant or sanitizer, successive doses of a 50/50 mixture of milk plus broth culture of test organisms. These doses are added at ten minute intervals. Thirty seconds after each addition, a transfer is made into broth containing a suitable inactivator. This method makes it possible to determine the capacity of a germicide to kill before the micro-organisms and organic contamination have exhausted its germicidal action. **Organisms:** Salmonella typhosa, ATCC #6539; Micrococcus pyogenes. var. aureus, ATCC #6538; Salmonella pullorum, ATCC #9093; Pseudomonas aeruginosa, ATCC #8689; Trichophyton interdigitale Emmons 640, ATCC #9533; Penicillium luteum, ATCC #9644; Saccharomyces cerevisiae, ATCC #10274. **Dilutions:** WESCODYNE: 1:320 (50 ppm available iodine); Sodium hypochlorite: (100 ppm available chlorine); Quaternary: (50%) 1:5,000 (200 ppm active ingredient). **Temperature:** 15°C. **Media:** Fluid thioglycolate medium, USP XIII was used for testing WESCODYNE and sodium hypochlorite "Letheen" broth was used for testing alkyl dimethyl benzyl ammonium chloride.* All tests were re-subcultured in the same medium. **Results:** See above chart. **Conclusion:** The cumulative number of successful kills shows WESCODYNE to be over three times more effective than the nearest material tested.

*Neopeptone dextrose broth was used for testing the alkyl dimethyl benzyl ammonium chloride against the three fungi.

Wescodyne vs. Leading Phenolic Disinfectant. (A. Cantor and H. Shelanski Capacity Test as described in Soap and Sanitary Chemicals, February 1951.) The method used in this test is the same as that used in the Capacity Test for Germicidal Action described at left. **Dilutions:** WESCODYNE: 1:213 (75 ppm available iodine); phenolic disinfectant: 1:100 **Temperature:** 15°C. **Media:** Fluid thioglycolate medium, U.S.P. XIII was used for testing WESCODYNE and FDA nutrient broth was used for testing the phenolic disinfectant. All tests were re-subcultured in the same medium to eliminate bacteriostasis. **Results:** see above chart. **Conclusion:** This test shows that the bactericidal effectiveness (in the presence of organic contamination) of WESCODYNE at a dilution of 1:213 (75 ppm available iodine) is greater than that of a leading phenolic disinfectant at a dilution of 1:100.

PATHOGEN COLOR KEY:

- Salmonella typhosa (typhoid organism)
- M. pyogenes v. aureus (staphylococcus organism)
- Salmonella pullorum (poultry disease organism)
- Pseudomonas aeruginosa (wound contaminent organism)
- Trichophyton interdigitale (athlete's foot type of fungus organism)
- Penicillium luteum (mold organism)
- Saccharomyces cerevisiae (yeast organism)
- Strep. pyogenes hemolyticus (streptococcus organism)
- Escherichia coli (enteric organism)
- Shigella sonnei (dysentery organism)
- Salmonella schottmuelleri (food contaminent causing dysentery)

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WESCODYNE's advantages are extraordinary. Its greater germicidal capacity is shown at left. Two other features are equally outstanding:

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INCERT T2030—30 mEq K+ and Cl− in 12.5 cc. sterile solution (2.2 mEq/cc.).
INCERT T2020—40 mEq K+ and Cl− in 12.5 cc. sterile solution (3.2 mEq/cc.).

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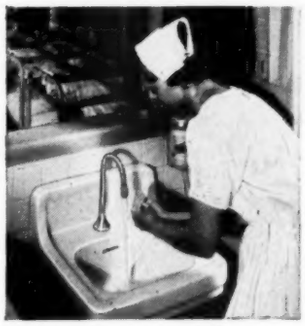

From an Ohio State University paper,* "...in our experience and that of others, hexachlorophene baths constitute a safe, relatively convenient and effective method of preventing *staphylococcal* skin infection in the new born nursery."

The departments of Pediatrics and Bacteriology of the Ohio State University in a study of an epidemic among infants and nursing mothers reported they used, "... a liquid cleansing detergent containing 3% hexachlorophene, (Hexa-Germ was one of two products used) and employing a brush and orange stick."

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*STAPHYLOCOCCAL INFECTIONS IN NEWBORN INFANTS. I. STUDY OF AN EPIDEMIC AMONG INFANTS AND NURSING MOTHERS. By Thomas E. Shaffer, M.D., Jack N. Baldwin, Ph.D., Melvin S. Rheins, Ph.D., and Robert F. Sylvester, Jr., M.D., Departments of Pediatrics and Bacteriology, Ohio State University (Pediatrics, Vol. 18, No. 5, November 1956)

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1. Thomas, J. W.: Ann. Allergy *16*:128, 1958

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Supplied: As a 100 mg. and a 250 mg. Mix-O-Vial.

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References: 1. Hull, E.: Kansas City M.J. 33:19 (March) 1957. 2. Grater, W. C.: Ann. Allergy 13:191 (March-April) 1955. *Trademark, Reg. U. S. Pat. Off.

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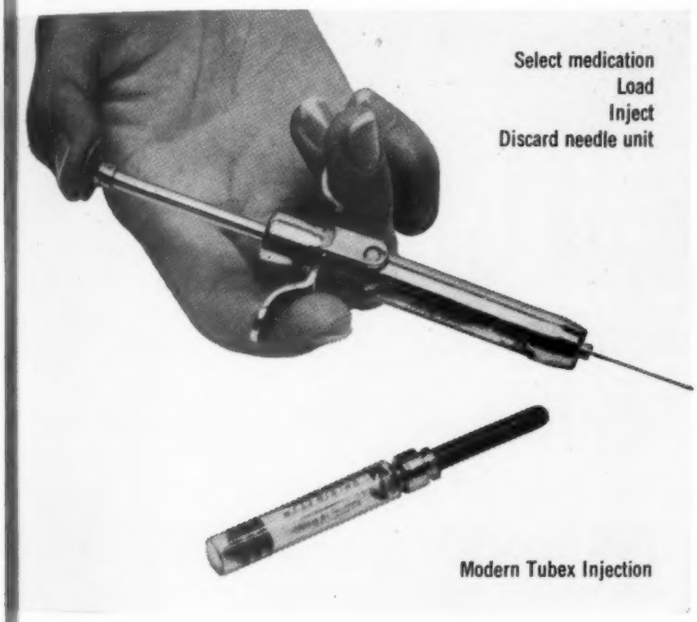

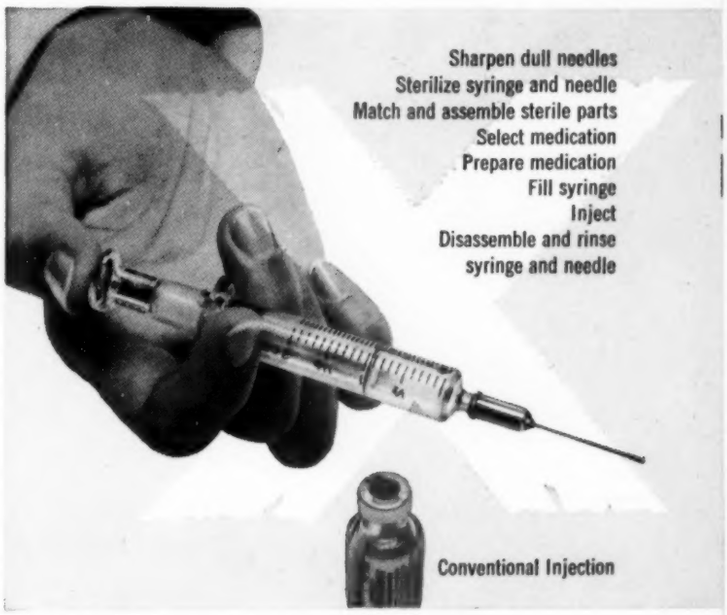

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*Based on Hunter, J.A., et al.: Hosp. Management *81*:82 (March) 1956, *81*:80 (April) 1956, *83*:86 (March) 1957. Reprints of these studies are available from your Wyeth Territory Manager or write Wyeth, P.O. Box 8299, Philadelphia 1, Pa.

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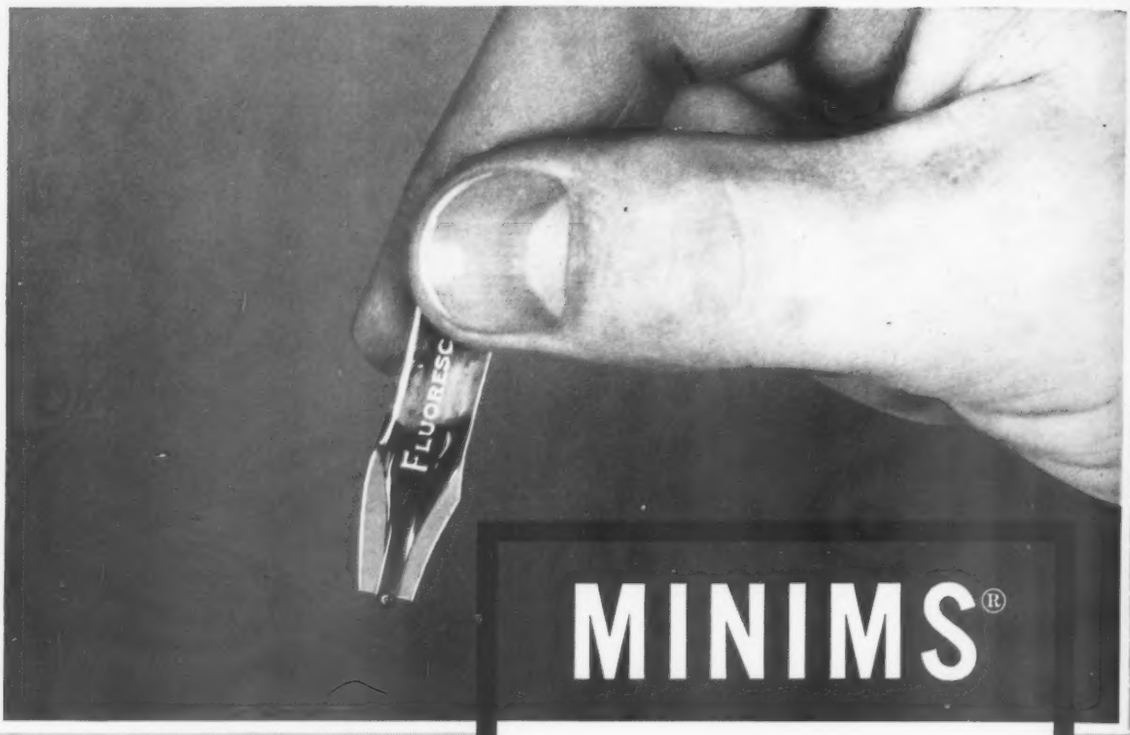

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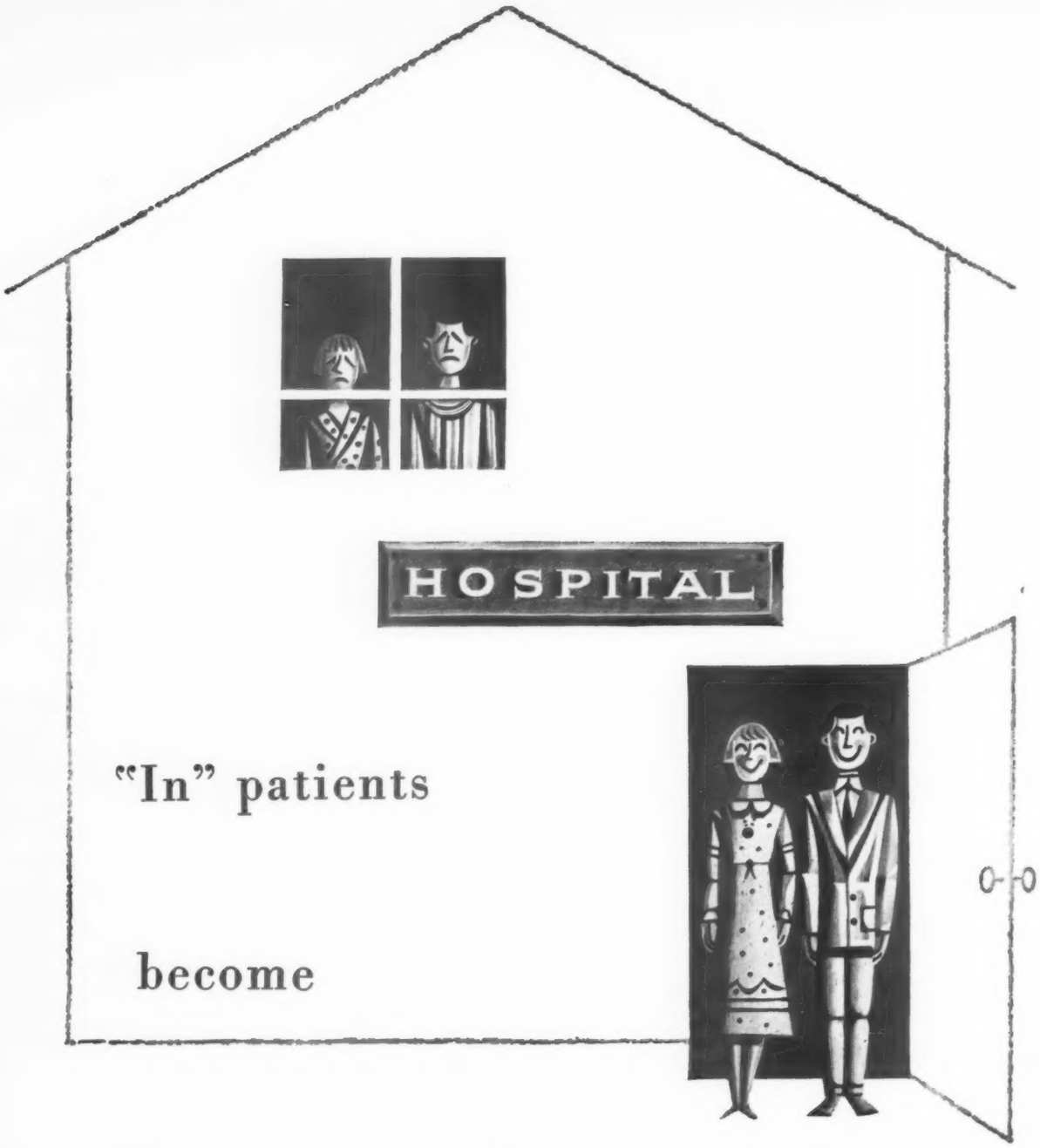

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Dear Sirs:

Appreciation to Members

DEAR SIRS: One of the nicest things which has happened to me recently was the reception of a telegram from the Executive Committee in session at the recent Convention in Los Angeles. I wish I could find the words with which to express my deepest gratitude and appreciation. The message told me I am still thought of, even though I am somewhat out of the active stream of affairs.

I am sure Los Angeles outdid itself as host to this great national body, and I presume it was well attended as well as in every way a success. Having to forego participation, was one of the hardest things I had to accept recently.

The writing of this letter provides me with an opportunity to congratulate the SOCIETY on the wonderful spread and format for the JOURNAL. The present design makes it second to none in the professional field. It can proudly stand side by side with those of allied professions (although it could always have done this). It is a splendid example of progress and growth.

Accept my sincere wishes and appreciation for continued progress. I hope that I will be able to meet with you all in the not too distant future and make up for this year's disappointment.

SISTER MARY JUNILLA, O.S.F.

St. Francis Hospital
of Santa Barbara
Santa Barbara, Calif.

EDITOR'S NOTE: Sister Mary Junilla was formerly Chief Pharmacist at Queen of Angels Hospital in Los Angeles. She is a former Treasurer of the ASHP and was instrumental in organizing the Southern California Society of Hospital Pharmacists.

Appreciation to Members

DEAR SIRS: I want to thank you and the entire SOCIETY for your efforts and for making the necessary arrangements for my safe return to Cincinnati. I arrived here safely on Monday night, May 5.

I want to thank especially the pharmacists in California for their many visits and their kind notes of encouragement; Mel Schwartz, Mt. Sinai Hospital Pharmacist, for his many visits and for his kindness to my niece when she arrived to take me home; Max Lederer of the Riker Company for obtaining the good doctor who attended me in California; Sister Mary Florentine, for having Father Sullivan visit me, and to all the good nuns for their prayers.

I am very proud to belong to an organization which is so thoughtful of the welfare of its members and I want you to know how very grateful I am to all of you. I would like very much to hear from any of the pharmacists who can find the time to write to me while I am a patient at the hospital.

ELIZABETH LYNCH, *Pharmacist*

Jewish Hospital
Cincinnati 29, Ohio

EDITOR'S NOTE: Miss Lynch, the delegate from the Society of Hospital Pharmacists of Greater Cincinnati, was hospitalized in Los Angeles during the recent Convention.

Enjoy Journal

DEAR SIRS: As for the AMERICAN JOURNAL OF HOSPITAL PHARMACY, it is very attractive and so improved. I happen to have some old issues, 1946 and 1947. What a remarkable growth in so short a period of time . . .

ANNA C. RICHARDS, *Chief Pharmacist*

Mountainside Hospital
Montclair, N. J.

DEAR SIRS: Please send us two copies of the article by Milton W. Skolaut and William H. Briner, "Current Status of Disposable Needles and Syringes," as printed in the November-December (1957) issue of *The Bulletin*.

SAMUEL ZIBIT, *Assistant Director*

Mount Sinai Hospital
4300 Alton Rroad
Miami Beach 40, Florida

DEAR SIRS: I would appreciate a copy of the March-April issue of *The Bulletin* (1952). According to information I have received, it contains an article by George Archambault on the business side of hospital pharmacy.

I enjoyed the new issue of the AMERICAN JOURNAL OF HOSPITAL PHARMACY and will look forward to it as a monthly source of information.

DOUGLAS L. VIVIAN, *Pharmacist*

Hurley Hospital
Flint 3, Michigan

TIMOTHY

common cause of

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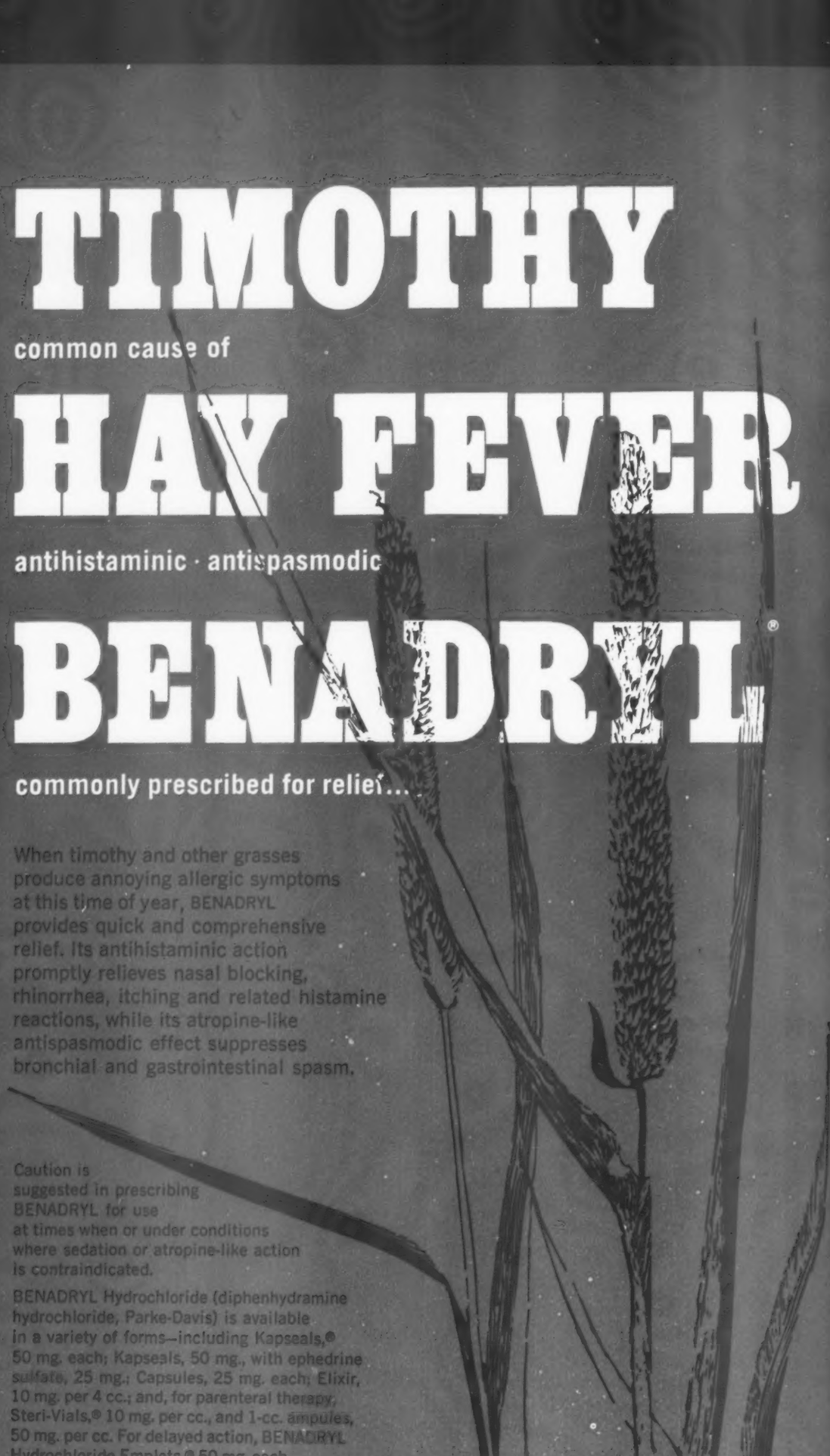

When timothy and other grasses produce annoying allergic symptoms at this time of year, BENADRYL provides quick and comprehensive relief. Its antihistaminic action promptly relieves nasal blocking, rhinorrhea, itching and related histamine reactions, while its atropine-like antispasmodic effect suppresses bronchial and gastrointestinal spasm.

Caution is suggested in prescribing BENADRYL for use at times when or under conditions where sedation or atropine-like action is contraindicated.

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editorial

by DON E. FRANCKE

Organizational Needs of the Society I.

► HOW CAN THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS function in a more democratic and effective manner? What organizational structure would best encourage dynamic growth of the SOCIETY along desirable professional lines? Answers to these and similar questions are being sought by the ASHP Committee on Constitution and By-laws.

The present organizational structure of the ASHP is based upon three interrelated groups, namely (1) the membership, (2) a central governing body known as the Executive Committee, and (3) a House of Delegates in which each ASHP Affiliated Chapter is represented. Of these, only the Executive Committee will be commented on now.

The present Executive Committee is composed of ten members: the President, the Past-President, the President-Elect, the Vice-President, the Secretary, the Treasurer, and the Chairmen of four Standing Committees, i.e., Program and Public Relations, Pharmacists in Government Service, Membership and Organization, and Minimum Standards.

As now constituted, the Executive Committee has two inherent weaknesses in its organization. First, the majority of its members are appointed or elected to serve only a one-year term. Second, four of its members are appointed by the President, rather than being elected by the membership.

The Executive Committee is a policy-making body and each member becomes responsible for policy as he (1) votes on individual questions, and (2) prepares and submits reports in which he recommends a specific policy or course of action to the group. This is a difficult assignment for the new member who comes to his first meeting. However, it must be emphasized, the problem lies not in the new member but in the brevity of his term of office.

A one-year term of office is good neither for the member who serves it nor for the organization he serves. It is too short a period of time for the member to obtain the background required for helpful participation in formulating and deciding policies which affect the future of the ASHP. Neither is the time sufficient for him to become well-acquainted with the current status of the SOCIETY'S numerous projects. Furthermore, just as the new member has gained knowledge and experience in the affairs of the SOCIETY, he is replaced by another who is faced with the same problems.

A second undesirable feature of the present organization of the Executive Committee is that four of its members are appointed by the President. Thus the President, with his own vote and those of the four members he appoints, may be in a position, theoretically, to control the actions of the executive body. We say theoretically because we know this has never happened and it is unlikely that it ever will. Still, the possibility exists and the possibility is undesirable.

Each of these weaknesses of organization of the Executive Committee could be corrected by expanding the executive body to 12 members to include the President, the President-Elect, the Past-President, the Vice-President, the Secretary, the Treasurer, and six members who could be elected for three-year terms by the ballot of the entire membership. The latter members of the executive board would run in the election as candidates to the board, with two members being elected each year to maintain rotation of the board membership. The Secretary and the Treasurer are now elected for three-year terms. The successful candidates for the presidency serves for three years, as President-Elect, as President, and as Past-President. Thus, under the suggested plan, all members of the ASHP executive body, except the Vice-President, would serve three year terms. The Vice-President could serve more than one year since he would be eligible for nomination to one of the other offices.

Under such a plan, it would seem advisable for the ASHP executive group to elect its own chairman or presiding officer. This would permit selection of the most experienced and best qualified individual as the coordinator of the SOCIETY'S executive group.

The strength of the SOCIETY'S executive body would be significantly increased by providing for the election, rather than appointment, of all of its members, by extending their terms of office to three years, and by permitting this group to elect its own chairman.

ASHP

THE AUTHORITY OF IDEAS

by WALTER M. FRAZIER

► TO BE THE RECIPIENT OF AN HONOR such as the Harvey A. K. Whitney Award causes one to reflect on his indebtedness to those who have been responsible for this recognition. This award provides the opportunity for me to transmit the honor to my colleagues, to those who have generously given me ideas to use and who have inspired me to use them, and who have given me the insight to understand the true meaning of pharmacy and the vast possibilities for a full and pleasant professional life in the practice of hospital pharmacy.

Influence

I recently read a little book entitled, "Memoirs of Childhood and Youth" by Albert Schweitzer. He says, "The ideas which determine our character are implanted in mysterious fashion." Dr. Schweitzer is deeply impressed by the fact that so many people gave him something without knowing it. Continuing, he says, "Such people, with whom I have, perhaps, never exchanged a word, yes and others, about whom I have merely heard things by report, have had a decisive influence upon me. Similarly, not one of us knows what effect his life produces and what he gives to others; that is hidden from us and must remain so, though we are often allowed to see some little fraction of it so that we may not lose courage."

WALTER M. FRAZIER is Director of Pharmacy Service at Springfield City Hospital, Springfield, Ohio.

Presented as the Harvey A. K. Whitney Award Lecture at the annual meeting of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, Los Angeles, April 21, 1958. This Award is given by the Michigan Society of Hospital Pharmacists.

Interpretation

The word "ideas," like other words in our language, often fails to adequately express the meaning which the speaker wishes to convey. To some people an idea may be a thought, an apprehension, a notion, or perhaps a design. To the theologian, or the philosopher, ideas may mean images, ideals or beliefs. To a professional person or a member of a progresive organization, ideas may mean ideals or opinions or knowledge, or plans in stages of development or implementation.

History and Life

Norman Cousins talks about the history of ideas in a new book titled, "In God We Trust." He says an idea does not have to find its mark in the minds of large numbers of people in order to create an incentive for change. He observes, "Ideas have a life of their own. They can be nourished and brought into active growth by a small number of sensitive, vital minds which somehow respond to the needs of the total organism, however diffused the parts of the organism may be. These minds sense both the need for change and the truth of the ideas that define the nature of change. When the ideas are articulated and advocated, the popular response is not merely the product of logic reaping its gains, but of a dormant awareness coming to life."

Harvey A. K. Whitney

These thoughts cannot but recall the life of Harvey A. K. Whitney. Surely his influence has been decisive.

He has influenced our profession in ways far beyond measure, its practitioners in numbers far beyond his knowledge. Mr. Whitney's ideas had a life of their own and they truly created an incentive for change.

The ideas of Harvey A. K. Whitney originated in the application of knowledge, experience, ability, and dedication. These ingredients formed the destiny of his career. His ideas have become ideals, in the sense of attainable standards of practice. His systems and practical methods are still patterns of procedure in the operation of pharmacy departments in hospitals.

Colleague

Mr. Whitney was also influenced by his contemporaries. He traveled in good professional circles. He was recognized as a superior practitioner in the American Pharmaceutical Association; a man whose ideas and opinions were sought by leaders in the various branches of pharmacy. He had unusual ability to recognize good opinions and competence in others. His friendship with Dean Edward Spease was important because both men were pioneers and their ideas fused into mutual assistance and the encouragement of others. There was a small group of people who represented hospital pharmacy, who knew Mr. Whitney and Dean Spease and understood the ideas and plans which were developing. Mr. Donald A. Clarke, Mr. J. Solon Mordell, Mr. Thomas Reamer, Miss Hazel Landeen, Mrs. Evlyn Gray Scott, Miss Geraldine Stockert, Mr. Russell Stimson, Dean Louis Zopf, and a few others wanted to participate in these plans; they, too, had ideas. Persistence enabled Mr. Whitney to convince other leaders in the American Pharmaceutical Association that hospital pharmacy practice constituted a special activity which deserved a place in the Association.

Authority

In an organization of any kind, experience has much to do with ideas. Good ideas and designs become, through good planning, the ideal and accepted standards for action and performance. The authority of ideas is established in convincing manner by James D. Mooney in his great book, "The Principles of Organization."

In his discussion of the advisory phase of staff service, Mr. Mooney points out that leaders in every large organization need information and even staff counsel. Beyond that, he states, "staff function exercises an authority of its own, an authority no less real than line authority, even though it includes no right of command. The line represents the authority of man; the staff represents the *authority of ideas.* The true value of a staff official has only one measure, his ability to generate ideas that are of value to line authority, and his efficiency in imparting these ideas to the whole organization. Through this authority in sound and workable ideas, the staff official may frequently advance to important line command. Likewise, advancement in line leadership may often depend on the leader's capacity to generate workable ideas, quite as much as anything inherent in his own right of command."

During the early years of Harvey Whitney's activity there was no authority of man in hospital pharmacy. The profession was unorganized. The hospital pharmacist was, indeed, the forgotten man of pharmacy. But Harvey Whitney did possess the authority of ideas. With this authority he was able to mold an obscure and unrecognized group of professional practitioners into a well-organized professional society. Berman, the historian, has called this "One of the most dramatic and significant developments in the whole range of American pharmaceutical history . . ."

Founder

The energy and enthusiasm of Mr. Whitney brought about the implementation of ideas which resulted in the founding of the American Society of Hospital Pharmacists. This was only the beginning, however, and he continued to work to build a national organization. He personally visited individuals and small groups to recruit members. It was his idea that every ASHP member should first be a member of the American Pharmaceutical Association. Each step of the new organization was on solid ground and although progress was slow, it was steady and it was inspired.

Editor

Creation of a national publication for hospital pharmacists is another area in which Mr. Whitney exercised the authority of ideas. Mr. Whitney bent his energy to the task of unifying all members by joining with Mr. Leo Mossman of the Ohio Society of Hospital Pharmacists to launch *The Bulletin of the American Society of Hospital Pharmacists. The Bulletin* became the greatest source of encouragement and information to the individual member, and it nourished the roots of the growing organization.

Experience, Aims, and Ends

Ideas in the sense of ideals or goals give the impression of something of the future or something never attainable for the present. The following passages were written by the psychologist, John Dewey, in his book, "Human Nature and Conduct": "Every ideal is preceded by an actuality. Ideas, thoughts of ends, are not spontaneously generated. Reason, pure of all influence from prior habit is a fiction. Aims

begin as a wish to change. The transformation depends upon the working out of means through study of existing circumstances and this knowledge, joined to a wish creates a purpose . . . The trouble with what sometimes passes for ideals, is that they do not get beyond the stage of fancy, of something agreeable and desirable based upon an emotional wish . . . Idealism must indeed come first, the imagination of some better state generated by desire. But unless ideals are to be dreams, and idealism a synonym for romanticism and phantasy-building, there must be a most realistic study of actual conditions . . ."

Preceptor

Mr. Whitney was an idealist, but not an idle dreamer. His imagination was keen, but he was also realistic. His ideals and imagination generated in him a desire for a better state for hospital pharmacy service. Studying the actual conditions which existed in his profession, he perceived the great need for specialized education and training for hospital pharmacists. He took action.

The first internship program for hospital pharmacists was established by Harvey Whitney. His success as a teacher and preceptor is well-known. He realized that the future of hospital pharmacy depends upon adequate preparation of the men and women who would accept the responsibility for improving the pharmaceutical services required in hospitals. The ideas he developed in the practical application of specialized training grew and were later adopted by other practitioners and educators who became aware of the need for this training and the significance of his work. He was alert to all opportunities for providing new services and he gladly accepted any new assignments in which the pharmacy department could provide additional or improved service for the hospital. This too, was observed and followed by his contemporaries.

Mr. Whitney's authority of ideas for specialized education for hospital pharmacists was not strong enough to overcome the authority of man which was held in his local college of pharmacy. Still the influence of his ideas went beyond his local situation and greatly influenced Dean Edward Spease who, in 1937, instituted graduate work in hospital pharmacy at Western Reserve University. It was to be yet another decade before another college of pharmacy would offer a similar program. The authority of ideas is not bounded by time, the authority of man is fleeting. In time, it is always the authority of ideas which reigns supreme.

Ethos

Ideas and ideals have a special significance in a profession. Herman Finer, author of "Administration and the Nursing Services," speaks of the *ethos* of a profession. These are his words. "Every occupation and more particulary every profession has its ethos, that is the fountain of its ethics, or in other words, the values that pervade its practical conduct and attitude to its clientele. Ethos means the animating spirit of any undertaking, whether carried on by one person, or by collective effort. It is the dominating spirit infusing, graduating and adapting all efforts, more or less consciously and sensitizing the practitioners to their tasks. It is composed of (1) a sense of purpose and obligation, (2) an apprehension of a mission, (3) a clear idea of the significance of such purpose and mission in relation to one's own selfish claim for reward and recognition, and (4) a certain moral tension or excitement in their conduct."

Practitioner

The animating spirit of Mr. Whitney was professional service. He had a keen sense of purpose, and of his obligation to achieve it. He knew his mission and he had a clear idea of the true significance of hospital pharmacy. He lived his profession with enthusiastic excitement.

Mr. Whitney was quite aware that thoughts without action are vapor. He knew that to make his ideals of professional service meaningful, he must make them a part of his everyday living.

Thus, in his own department, Mr. Whitney developed the many services offered to the point where his pharmacy actually provided what we strive for today in total pharmacy service. He was appreciated and respected by his medical staff, as a true colleague in all allied health services. His ability, ingenuity, and initiative enabled him to adapt the facilities and capabilities of his department to unprecedented service for the patient, the physician, and the other departments of the hospital. His professional achievements continue to be an inspiration to hospital pharmacists. Even those who never knew him are influenced by his ideals, and his dedication now lives in the performance of his colleagues and his proteges.

Inspiration

A few months ago hospital pharmacy lost an inspirational leader. As it must to all men, death came to Harvey A. K. Whitney. But through his contributions, hospital pharmacy has begun a new life. During his fruitful lifetime, organizational difficulties one by one, were met with a determination characteristic of the Whitney influence. His ideas have become the realities we now enjoy. Harvey A. K. Whitney contributed immeasurably to the heritage of every member of the American Society of Hospital Pharmacists. His inspiration has extended the services of the pharmaceutical profession. The authority of ideas still prevails.

a checklist of

PSYCHOTHERAPEUTIC DRUGS

by BENJAMIN TEPLITSKY

► PSYCHOTHERAPEUTIC DRUG is the term used by the Council on Drugs of the American Medical Association to describe those medications which have been known by a variety of names, including: ataraxic, tranquilizer, normalizer, calmative, neurosedative, psychic energizer, pacific, anticonfusion, and antihallucination drugs.[1]

Because of the relatively large number of psychotherapeutic drugs which have been introduced during the recent past, it was believed that a checklist outlining some of the most pertinent information regarding these drugs would be helpful. The following checklist gives the chemical name or composition, a brief statement of actions and uses, side effects, dosage, preparations available, and the source of supply.

Alseroxylon N.N.D.

Rau-Tab®
Rautensin®
Rauwiloid®

COMPOSITIONS: Fat-soluble alkaloidal fraction extracted from root of *Rauwolfia serpentina* (Benth), consisting of reserpine and other nonadrenolytic amorphous alkaloids.

ACTIONS AND USES: Has action of sedative-antihypertensive-bradycrotic alkaloids of whole root; acts centrally; does not produce postural hypotension.

SIDE EFFECTS: Nasal stuffiness, weight gain, and diarrhea; occasionally, dryness of mouth, insomnia, nervousness, paradoxical anxiety.

DOSAGE: 2 to 4 mg. daily. Orally, 1 mg. is approximately equivalent to 0.2 mg. reserpine.

PREPARATIONS: Tablets 2 mg.

MANUFACTURERS: National Drug Co. (Rau-Tab), Riker Laboratories, Inc. (Rauwiloid), and Smith-Dorsey (Rautensin).

BENJAMIN TEPLITSKY is Chief, Pharmacy Service, Veterans Administration Hospital, Albany, N.Y.

Azacyclonol Hydrochloride N.N.D.

Frenquel® Hydrochloride

CHEMICAL NAME: alpha-(4-Piperidyl)benzhydrol hydrochloride.

ACTIONS AND USES: Anti-hallucinatory, anti-confusion agent indicated for acute schizophrenic reactions. Blocks dissociation and hallucinations induced by lysergic acid diethylamide (LSD-25) and other hallucinogenic agents. Used in controlling hallucinatory symptoms of acute schizophrenic patients through a *blocking* agent rather than a depressant action.

SIDE EFFECTS: Has no apparent effects other than those on behavior. Does not affect the brain if it is "normal."

DOSAGE: Initially, 100 mg. three times daily, until symptoms are controlled, then 20 mg. three times daily.

PREPARATIONS: Injection 5 mg. per ml., 20 ml. ampuls; tablets 20 mg. and 100 mg.

MANUFACTURER: Wm. S. Merrell Co.

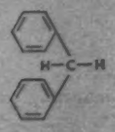
Benactyzine Hydrochloride N.N.D.

Phobex® Hydrochloride
Suavitil® Hydrochloride

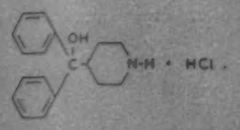
CHEMICAL NAME: 2-Diethylaminoethyl benzilate hydrochloride.

ACTIONS AND USES: Centrally acting anticholinergic agent, which due to its emotional and muscular relaxing

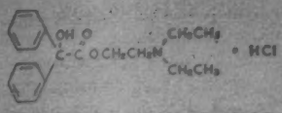
Diphenyl Methane Derivatives



Diphenyl Methane, Basic Structure

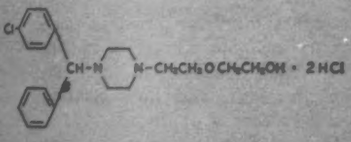


Azacyclonol Hydrochloride N.N.D.
Frenquel®

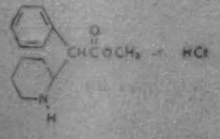


Benactyzine Hydrochloride N.N.D.
Phobex®, Suavitil®

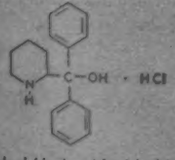
Captodiamine Hydrochloride



Hydroxyzine Hydrochloride N.N.D.
Atarax®

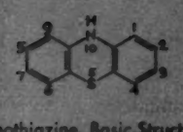


Methylphenidate Hydrochloride N.N.D.
Ritalin®

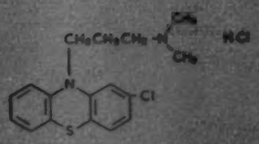


Pipradrol Hydrochloride N.N.D.
Meratran®

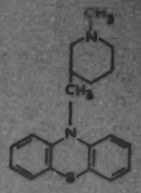
Phenothiazine Derivatives



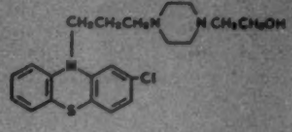
Phenothiazine, Basic Structure



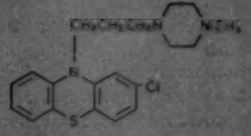
Chlorpromazine Hydrochloride N.N.D.
Thorazine®



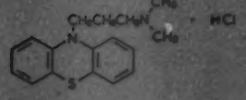
Mepazine
Pacatal®



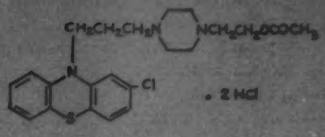
Perphenazine
Trilafon®



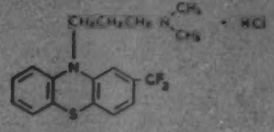
Prochlorperazine N.N.D.
Compazine®



Promazine Hydrochloride N.N.D.
Sparine®

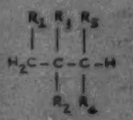


Thiopropazate Hydrochloride
Dartal®

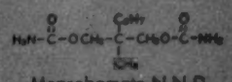


Trifluprομazine Hydrochloride
Vesprin®

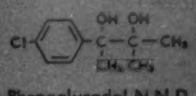
Propanediol Derivatives



Propanediol, Basic Structure

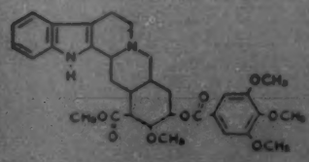


Meprobamate N.N.D.
Equanil®, Miltown®

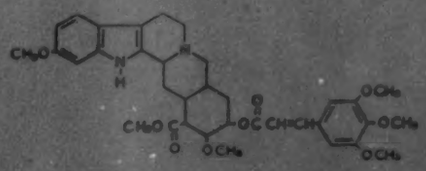


Phenaglycodol N.N.D.
Ultran®

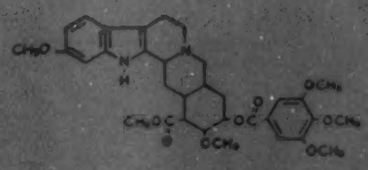
Rauwolfia Derivatives



Deserpidine N.N.D.
Harmonyl®

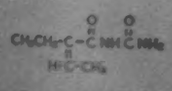


Rescinnamine
Moderil®

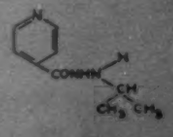


Reserpine N.N.D.
Reserpoid®, Roxinoid®,
Sandril®, Serfin®, Serpasil®

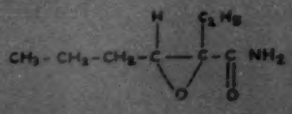
Miscellaneous Derivatives



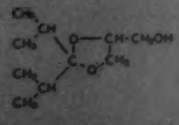
Ectylurea N.N.D.
Nostyn®



Iproniazid Phosphate
Marsilid®



Oxanamide
Quioctin®



Promoxolane N.N.D.
Dimethylone®

properties is useful as a psychotherapeutic agent in treatment of psychoneurotic disorders with anxiety, obsessive-compulsive or mild depressive reactions.

SIDE EFFECTS: May include drowsiness, dizziness, occasional slight locomotor ataxia and paresis of visual accommodation, and some dryness of the mouth.

DOSAGE: Initially, 1 mg. three times daily for two or three days, administered after meals to minimize or obviate side effects. May be increased to 3 mg. three times daily if done gradually.

PREPARATIONS: Tablets 1 mg. and 5 mg.

MANUFACTURERS: Lloyd, Dabney & Westerfield, Inc. (Phobex), Merck Sharp & Dohme (Suavitil).

Captodiamine Hydrochloride Suvren® Hydrochloride

CHEMICAL NAME: p-Butylmercapto-benzhydryl-beta-dimethylaminoethyl-sulfide hydrochloride.

ACTIONS AND USES: A nonhypnotic stabilizer which implements concept of moderation in management of anxiety and tension; action is aggregate, not immediate; exerts a direct musculotropic spasmolytic effect on smooth muscle.

SIDE EFFECTS AND CONTRAINDICATIONS: If immediate response is required, prompt-acting sedatives or tranquilizers may be *temporarily* employed; if replacing a barbiturate, the barbiturate should be gradually withdrawn over a period of 4 to 7 days. Occasionally a metallic or bitter taste may be noted.

DOSAGE: Adults, 100 mg. three times daily with meals and at bedtime; children, 50 mg. three times daily with meals and 100 mg. at bedtime.

PREPARATIONS: Tablets 50 mg. and 100 mg.

MANUFACTURER: Ayerst Laboratories.

Chlorpromazine Hydrochloride N.N.D. Thorazine® Hydrochloride

CHEMICAL NAME: 2-Chloro-10-(3-dimethylaminopropyl) phenothiazine hydrochloride.

ACTIONS AND USES: Central nervous system depressant and antiemetic finding widest use in alleviating anxiety, tension, agitation, and in lessening motor activity in psychoneurotic and psychotic patients.

SIDE EFFECTS: Orthostatic hypertension, jaundice, blood dyscrasias, and a Parkinson-like syndrome warranting cessation of therapy. Mild side effects may include tachycardia, hypothermia, dryness of the mouth, dermatitis, photosensitivity, and nausea.

DOSAGE: Should be adjusted to individual response and severity of condition.

PREPARATIONS: Injection 25 mg. per ml., 1 and 2 ml. ampuls and 10 ml. vials; solution, concentrated, 30 mg. per ml.; Spansules 30 mg., 75 mg., 150 mg., and 200 mg.; suppositories 25 mg. and 100 mg.; syrup 10 mg. per 5 ml.; tablets 10 mg., 25 mg., 50 mg., 100 mg., and 200 mg.

MANUFACTURER: Smith, Kline & French Laboratories.

Deserpidine N.N.D. Harmonyl®

CHEMICAL NAME: 11-Desmethoxyreserpine, an ester alkaloid isolated from *Rauwolfia canescens* Linn.

ACTIONS AND USES: Sedative-antihypertensive-bradycrotic action, similar to reserpine.

SIDE EFFECTS: Qualitatively similar to those of reserpine with less incidence and severity.

DOSAGE: Initially, for mild essential hypertension, 0.25 mg. three or four times daily, with maintenance dose of 0.25 mg. after about 10 days of therapy; anxiety states, from 0.1 mg. daily in mild cases to not less than 2 to 3 mg. daily for institutionalized patients.

PREPARATIONS: Tablets 0.1 mg., 0.25 mg., and 1 mg.

MANUFACTURER: Abbott Laboratories.

Ectylurea N.N.D. Nostyn®

CHEMICAL NAME: 2-Ethyl-*cis*-crotonylurea.

ACTIONS AND USES: Moderates apprehension, anxiety and tension, and is useful in neurotic and mildly upset patients; produces mild depression of central nervous system.

SIDE EFFECTS: Infrequent rash, disappearing upon discontinuation of drug.

DOSAGE: 150 to 300 mg. three or four times daily as calmative.

PREPARATION: Tablets 0.3 Gm.

MANUFACTURER: Ames Co., Inc.

Hydroxyzine Hydrochloride N.N.D. Atarax® Hydrochloride Vistaril® Hydroxazine

CHEMICAL NAME: 1-(*p*-Chlorobenzhydryl)-4-[2-(2-hydroxyethoxy)ethyl]piperazine dihydrochloride.

ACTIONS AND USES: Central nervous system depressant employed clinically as calming agent for symptomatic treatment of emotional or mental disorders characterized by anxiety, tension, and agitation.

SIDE EFFECTS: Transient drowsiness may occur shortly after administration of drug.

DOSAGE: 25 mg. three times daily for adults; 10 mg. twice daily for children.

PREPARATIONS: Injection 25 mg. per ml., 10 ml. vials; syrup 10 mg. per 5 ml.; tablets 10 mg., 25 mg., and 100 mg.; capsules 25 mg., 50 mg., and 100 mg.

MANUFACTURER: J. B. Roerig and Co. (Atarax), Pfizer Laboratories (Vistaril).

Iproniazid Phosphate Marsilid® Phosphate

CHEMICAL NAME: 1-Isonicotinyl-2-isopropyl hydrazine phosphate.

ACTIONS AND USES: Amine-oxidase inhibitor affecting serotonin metabolism. Has a pronounced effect in depressed and regressed psychotic patients, in mild depression, as an appetite stimulant, and in promoting a feeling of well-being and increased vitality.

SIDE EFFECTS: May cause constipation, hyperreflexia, paresthesias, neuralgia, dizziness, postural hypotension, sweating, dryness of mouth, delay in starting micturition, and impotence. Should not be given with cocaine or meperidine, and is not recommended in epileptic patients. Side effects are reversible upon reduction or cessation of therapy.

DOSAGE: Should not exceed total of 50 mg. daily.

PREPARATIONS: Tablets 10 mg., 25 mg., and 50 mg.

MANUFACTURER: Roche Laboratories.

Mepazine Pacatal®

CHEMICAL NAME: 10-(N-Methyl-3-piperidylmethyl)-phenothiazine.

ACTIONS AND USES: Decreases excessive psychomotor activity and "normalizes" patients suffering from senile deterioration, compulsions, anxiety neuroses, obsessions, conversion neuroses, paranoia, and schizophrenia; used to "normalize" thinking processes in mentally and emotionally disturbed patients.

SIDE EFFECTS: Constipation, dryness of mouth, and blurring of vision may occur at usual doses. At high doses, urinary difficulties, weakness, vomiting, or drowsiness may occur.

DOSAGE: 25 mg. three or four times daily for ambulatory patients, and 100 to 400 mg. daily for hospitalized patients.

PREPARATIONS: Injection 25 mg. per ml., 2 ml. ampuls; tablets 25 mg., 50 mg., and 100 mg.

MANUFACTURER: Warner-Chilcott Laboratories.

Meprobamate N.N.D. — Equanil® Miltown®

CHEMICAL NAME: 2-Methyl-2-n-propyl-1,3-propanediol dicarbamate.

ACTIONS AND USES: Central interneural blocking agent; useful in certain cases of abnormal motor activity; sometimes effective as antispastic agent in fibrositis where muscle spasm predominates; employed with psychotherapy in management of psychoneurotic anxiety and tension states.

SIDE EFFECTS: Although overall toxicity is low, it is capable of producing a variety of side effects and untoward reactions. Among more common are hypersensitivity reactions; also dermal manifestations, urticaria and erythematous and maculopapular skin rashes; shaking chills and fever; acute nonthrombocytopenic purpura, etc.

DOSAGE: 400 mg. three or four times daily.

PREPARATIONS: Tablets 200 mg. and 400 mg.

MANUFACTURERS: Wallace Laboratories (Miltown) and Wyeth Laboratories, Inc., (Equanil).

Methylphenidate Hydrochloride N.N.D. — Ritalin® Hydrochloride

CHEMICAL NAME: Methyl-*a*-phenyl-2-piperidineacetate hydrochloride.

ACTIONS AND USES: Central nervous system stimulant in various types of depression and chronic fatigue including those associated with drug therapy.

SIDE EFFECTS: Occasionally, patients experience nervousness, insomnia, anorexia, dizziness, palpitation, headache, and nausea. Significant changes in blood pressure and pulse rate rarely occur.

DOSAGE: 10 mg. two or three times daily; dosage will vary with therapeutic indication and patient response.

PREPARATIONS: Injection 100 mg., lyophilized, 10 ml. vials; tablets 5 mg., 10 mg., and 20 mg.

MANUFACTURER: Ciba Pharmaceutical Products, Inc.

Oxanamide — Quiactin®

CHEMICAL NAME: 2-Ethyl-3-propylglycidamide.

ACTION AND USES: Central interneuronal blocking (skeletal muscle relaxant) agent; anti-anxiety action similar to that of meprobamate. Useful in tension-anxiety states and neurological conditions where muscle spasm is a factor.

SIDE EFFECTS: Occasional drowsiness.

DOSAGE: 400 mg. four times daily. Should be adjusted to patient's needs.

PREPARATIONS: Tablets 400 mg.

MANUFACTURER: Wm. S. Merrell Co.

Perphenazine N.N.D. — Trilafon®

CHEMICAL NAME: 2-Chloro-10{3-[4-(*b*-hydroxyethyl)piperazinyl]propyl} phenothiazine.

ACTIONS AND USES: Central nervous system depressant useful in treatment of psychoneuroses predominantly characterized by anxiety, tension and agitation, in certain psychotic disorders, for hiccough, and antiemetic.

SIDE EFFECTS: Infrequent blurred vision, dryness of the mouth, constipation, and skin rash. Nausea and vomiting, urinary frequency or polyphagia are uncommon. At high dosages, a Parkinson-like syndrome may develop.

DOSAGE: Mild anxiety, 2 or 4 mg. three or four times daily; ambulatory patients with psychoneurosis, 4 to 8 mg. three times daily; hospitalized patients, 16 to 64 mg. daily. Intramuscular, 5 mg., repeated in 6 hours, should not exceed 15 mg. daily in ambulatory or 30 mg. daily in hospitalized patients; intravenous, if absolutely necessary, 1 mg. per minute, with total of 5 mg.

PREPARATIONS: Injection 5 mg. per ml., 1 ml. ampuls; syrup 2 mg. per 5 ml.; tablets 2 mg., 4 mg., 8 mg., and 16 mg.

MANUFACTURER: Schering Corp.

Phenaglycodol N.N.D. — Ultran®

CHEMICAL NAME: 2-*p*-Chlorophenyl-3-methyl-2,3-butanediol.

ACTIONS AND USES: Interneural blocking agent with mild acting neurosedative action; useful in emotional instability, anxiety-tension states, or functional disorders.

SIDE EFFECTS: Occasional drowsiness.

DOSAGE: 300 mg. three or four times daily.

PREPARATIONS: Capsules 300 mg.

MANUFACTURER: Eli Lilly and Co.

Pipradrol Hydrochloride N.N.D. — Meratran® Hydrochloride

CHEMICAL NAME: *a,a*-Diphenyl-2-piperidine-methanol hydrochloride.

ACTION ANE USES: Central nervous system stimulant inducing supramedullary stimulation and is useful as a cortical stimulant in depressive states that are not associated with strong anxiety or compulsive behavior.

SIDE EFFECTS: May include hyperexcitability, anorexia, and insomnia.

DOSAGE: 1 or 2 mg. three times daily, adjusted to patient's needs.

PREPARATIONS: Tablets 1 mg. and 2.5 mg.

MANUFACTURER: Wm. S. Merrell Co.

Prochlorperazine N.N.D. — Compazine®

CHEMICAL NAME: 2-Chloro-10-[3-(methyl-4-piperazinyl)-propyl]-phenothiazine.

ACTION AND USES: Antiemetic and central nervous system suppressant useful in nausea and vomiting, and mental disturbances characterized by anxiety and agitation; specific action in psychic and psychosomatic conditions.

SIDE EFFECTS: Contraindicated in coma, and marked central nervous system depression of drug origin. Mild side effects include somnolence, dizziness, moderate hypotension, tachycardia, blurred vision, dryness of mouth, and spasms of the voluntary muscles of the neck region.

DOSAGE: Initially, 5 mg. three or four times daily; dosage should be determined individually.

PREPARATIONS: Injection 5 mg. per ml., 2 ml. ampuls and 10 ml. vials; solution, concentrated, 10 mg. per ml.; Spansules 10 mg., 15 mg., and 30 mg.; suppositories 5 mg. and 25 mg.; tablets 5 mg., 10 mg., and 25 mg.

MANUFACTURER: Smith, Kline & French Laboratories.

Promazine Hydrochloride N.N.D. — Sparine® Hydrochloride

CHEMICAL NAME: 10-3(Dimethylaminopropyl)-phenothiazine hydrochloride.

ACTION AND USES: Central nervous system depressant with curarimimetic action in high doses; useful in neuropsychiatric agitation and acute psychoses, in acute alcoholism, and drug addiction.

SIDE EFFECTS: Drowsiness, dizziness, and postural hypotension may occur. Potentiates barbiturates. Transient leukopenia, agranulocytosis, and convulsive seizures have been observed.

DOSAGE: Total daily dosage may range from 25 to 300 mg.; determined by degree of central nervous system excitation present and patient response.

PREPARATIONS: Injection 50 mg. per ml., 2 ml. and 10 ml. vials; solution, concentrated, 30 mg. per ml.; syrup 10 mg. per 5 ml.; tablets 10 mg., 25 mg., 50 mg., 100 mg., and 200 mg.
MANUFACTURER: Wyeth Laboratories, Inc.

Promoxolane N.N.D.

Dimethylane®

CHEMICAL NAME: 2,2-Diisopropyl-4-methanol-1, 3-dioxolane.
ACTIONS AND USES: Selective blocker of interneural transmission resulting in relaxation of muscular spasm and tension; used in controlling tension states associated with dysmenorrhea, menopause, occupational stress, and post-alcoholic psychomotor agitation.
SIDE EFFECTS: Nausea or regurgitation occasionally.
DOSAGE: Initially, 0.5 Gm. after meals and at bedtime. May be reduced for individual maintenance therapy.
PREPARATIONS: Enteric coated capsules 0.25 Gm.
MANUFACTURER: National Drug Co.

Rauwolfia N.N.D.

Raudixin®
Rauserp®
Rauval®

COMPOSITION: Powdered whole rool of *Rauwolfia serpentina* (Benth). Chief alkaloid, reserpine.
ACTION AND USES: Exhibits a sedative-antihypertensive-bradycrotic action useful mainly in patients with anxiety or tension psychoneuroses. Finds some use in mild labile hypertension.
SIDE EFFECTS: Commonly, nasal stuffiness, weight gain, diarrhea, dryness of mouth, insomnia, nervousness, chronic fatigue, agitated or paranoid depression, and nightmares. Occurring rarely, peptic ulcers and skin eruptions.
DOSAGE: 200 to 400 mg. daily in two divided doses. Orally, 200 to 300 mg. is equivalent to 0.5 mg. reserpine.
PREPARATIONS: Tablets 50 mg. and 100 mg.
MANUFACTURERS: Bio-Factor Laboratories (Rauserp), E. R. Squibb and Sons (Raudixin), Vale Chemical Co., Inc. (Rauval).

Rescinnamine N.N.D.

Moderil®

COMPOSITION: Alkaloidal fraction of *Rauwolfia serpentina* (Benth).
ACTION AND USES: Central nervous system depressant with hypotensive and tranquilizing properties. Useful in treating mild and moderate labile essential hypertension, and in conditions characterized by anxiety and tension.
SIDE EFFECTS: May include drowsiness, nasal congestion, increased gastric secretion, and mild diarrhea.
DOSAGE: Initially, 0.25 mg. twice daily for two weeks; maintenance dose of 0.25 mg. daily.
PREPARATIONS: Elixir 0.5 mg. per 5 ml.; tablets 0.25 mg. and 0.5 mg.
MANUFACTURER: Pfizer Laboratories.

Reserpine N.N.D.

Raurine®
Rau-Sed®
Reserpoid®
Roxinoid®
Sandril®
Serfin®
Serpasil®
Serpate®
Serpiloid®

COMPOSITION: Pure crystalline alkaloid obtained from *Rauwolfia serpentina* (Benth).
ACTION AND USES: Exhibits a sedative-antihypertensive-bradycrotic action; used for treatment of mild or moderate labile essential hypertension, hypertension associated with toxemia of pregnancy, and psychoneuroses characterized by anxiety or tension.
SIDE EFFECTS: May include nasal stuffiness, weight gain, diarrhea, dryness of mouth, and insomnia; also nervousness, fatigue, agitated or paranoid depression, and nightmares. Occurring rarely, peptic ulcers and skin eruptions.
DOSAGE: Hypertension, 0.25 to 1 mg. daily in two or three divided doses; anxiety psychoneuroses, 0.5 to 2 mg. daily; disturbed psychotics, 3 to 5 mg. daily orally in conjunction with 5 to 10 mg. daily intramuscularly.
PREPARATIONS: Drops, oral, 2 mg. per ml.; elixir 0.2 mg. per 4 ml., 0.25 mg. per 5 ml., and 1 mg. per 4 ml.; injection 2.5 mg. per ml., 2 ml. ampuls and 10 ml. vials, and 5 mg. per ml., 10 ml. vials; tablets 0.1 mg., 0.25 mg., 0.5 mg., 1 mg., 2 mg., 4 mg., and 5 mg.
MANUFACTURERS: Ciba Pharmaceutical Products, Inc. (Serpasil), Eli Lilly and Co. (Sandril), Lloyd Brothers, Inc. (Raurine), Merck Sharp & Dohme (Roxinoid), Parke, Davis and Co. (Serfin), Riker Laboratories, Inc. (Serpiloid), E. R. Squibb and Sons (Rau-Sed), Upjohn Co. (Reserpoid), Vale Chemical Co., Inc. (Serpate).

Thiopropazate Hydrochloride

Dartal® Hydrochloride

CHEMICAL NAME: 1-(2-Acetoxyethyl)-4-[3-(2-chloro-10-phenothiazine)propyl]piperazine dihydrochloride.
ACTIONS AND USES: Exerts an antiemetic action, and controls excessive psychomotor activity; useful in treating agitation and anxiety of insomnia, anorexia, psychosomatic symptoms of peptic ulcer, cerebral arteriosclerosis, catatonic or paranoid schizophrenia, neuroses, psychoses, acute mania, Huntington's chorea, barbiturate addiction, and alcoholism.
SIDE EFFECTS: May show an extrapyramidal activity of pseudoparkinsonism on high dosage.
DOSAGE: Psychoses, 10 mg. three times daily; nonpsychoses, 5 mg. three times daily. Dosage should be adjusted in units of 10 mg. at intervals of 3 or 4 days.
PREPARATIONS: Tablets 5 mg. and 10 mg.
MANUFACTURER: G. D. Searle and Co.

Trifluprom azine Hydrochloride

Vesprin® Hydrochloride

CHEMICAL NAME: 10-(3-Dimethylaminopropyl)-2-trifluoromethyl)phenothiazine hydrochloride.
ACTIONS AND USES: Ameliorates psychomotor hyperactivity and assaultive behavior; useful in treating schizophrenia, manic states, sociopathic personality disturbances with psychotic reactions, mental deficiency with psychoses, and psychoses associated with organic brain disease and senility.
SIDE EFFECTS: Rarely observed skin eruptions, photosensitivity, and hyperthermia.
DOSAGE: Initially, 25 mg. three times daily, to be adjusted as needed.
PREPARATIONS: Tablets 10 mg., 25 mg., and 50 mg.
MANUFACTURER: E. R. Squibb and Sons.

References

1. Classification of Psychotherapeutic Drugs, *J. Am. Med. Assoc. 166*:1040 (Mar. 1) 1958.

SPECIAL TAX LIABILITY

by hospitals for dispensing alcoholic liquors

issued by H. A. DILLON

Alcohol and Tobacco Tax
Industry Memorandum CHI-58-2

May 15, 1958 — File ARC:AT:P:TRS

To: Hospitals and Similar Institutions:

1 Purpose

The purpose of this industry memorandum is to advise hospitals and similar institutions with respect to their liability for special occupational tax as retail liquor dealers by reason for their furnishing alcoholic liquors to patients.

2 Background

Internal Revenue law requires payment of special occupational tax as liquor dealer by those who engage in the business of selling alcoholic liquors. Regulations issued pursuant to the law provide that hospitals and similar institutions furnishing liquor to patients are not required to pay special tax provided that no specific or additional charge is made for the liquor so furnished. Also, there has been a question as to whether liquor could be furnished to a patient on a doctor's prescription without incurring special tax liability.

3 Liquor furnished pursuant to a prescription

In view of court decisions which have indicated that the quantity of the sale or the purpose of the sale, whether as a beverage or a medicine or for any other purpose, is not material to the question of liability, and in the absence of any statutory exemption, it is now held that the furnishing of an alcoholic liquor to a patient under conditions constituting a sale results in special tax liability, regardless of whether or not such liquor was furnished under a doctor's direction or prescription.

4 Conditions resulting in special tax liability

Whenever a hospital or similar institution furnishes an alcoholic liquor to a patient, whether pursuant to a prescription or otherwise under terms constituting a sale, the institution has incurred liability for the special occupational tax as a retail liquor dealer. The conditions constituting a sale would include any manner of accounting wherein a specific or additional charge is made to the patient because of his having received the liquor. The totaling of various items under a general heading, such as "Drugs" or "Pharmaceuticals" does not avoid liability if a charge for liquor is a part of the total.

H. A. DILLON is Acting Assistant Regional Commissioner Alcohol and Tobacco Tax, Internal Revenue Service, U. S. Treasury Department, Box 1144, Chicago 90, Illinois.

5 Conditions resulting in no special tax liability

In those cases where alcoholic liquor is furnished to a patient without any specific or additional charge, the hospital would not incur liability for special occupational tax. The words "no specific or additional charge," as used in the regulations, are interpreted as applying, for example, to those cases where a hospital or institution makes a fixed charge for treatment, subsistence, medicine, etc., and the over-all fee or charge remains the same regardless of whether or not alcoholic liquors are furnished to the patient. In such cases, an affidavit may be required, stating that no part of the charge to the patient included a charge for the liquor, directly or indirectly, or under some collective term such as "pharmaceuticals," "medicine," "drugs."

6 Effect of this ruling

Hospitals or similar institutions which, after receipt of this notice, elect to continue the dispensing of alcoholic liquors under conditions outlined above as resulting in liability will be required to pay special tax as retail liquor dealer beginning with the current fiscal year. The special tax stamp may be obtained as a retail dealer in medicinal spirits where the alcoholic liquor is furnished through the hospital pharmacy by a licensed pharmacist. Special tax is paid by filing special tax return of Form 11 with the District Director of the Internal Revenue District in which the hospital is located. The special tax rate as a retail liquor dealer (or retail medicinal spirits dealer) is $50.00 for each fiscal year beginning July 1st.

7 Inquiries

Inquiries regarding this memorandum should refer to its number and be addressed to Assistant Regional Commissioner, Alcohol and Tobacco Tax, P. O. Box 1144, Chicago 90, Illinois. Facilities for day-to-day service regarding operations related to alcohol and tobacco tax matters are also maintained by Supervisors in Charge of branch offices located at:

17 N. Dearborn Street
Room No. 1712
Chicago, Illinois
Telephone: DEarborn 2-4500

912 Cadillac Tower Building
Detroit 26, Michigan
Telephone: WOodward 5-7800

560 Federal Building
Milwaukee 2, Wisconsin
Telephone: BRoadway 2-8600

Some notes on the

NATIONAL TAIWAN UNIVERSITY HOSPITAL

(Formosa)

by WEN-YAH KOO

► THE PHARMACY DEPARTMENT of the National Taiwan University Hospital has a total of 42 employees. This includes the cashier for the Outpatient Department, technicians, apprentice pharmacists, and pharmacists.

views of manufacturing section

1. Percolation of tinctures
2. Drying oven for tablet granulations
3. Tablet manufacturing
4. Preparation of tubes of ointments

1

2

3

4

Perhaps I should clarify the status of the pharmacists. They are graduates of a four-year course in pharmacy and are licensed by the government.

Since 1954, with the reorganization of our hospital pharmacy, a three-month internship has been required. We are able to teach 15 students at one session.

Apprentice pharmacists are graduates of the equivalent of your high school. Pharmacy courses are combined with other subjects in the high school. Apprentice pharmacists are licensed by the government and may work only under the supervision of a registered pharmacist.

A technician has only one year of training in pharmacy.

Pharmacy Department

The Pharmacy Department at National Taiwan University Hospital is composed of five subdivisions. These are: Dispensing, Manufacturing, Parenteral Solution Preparation, Analytical, and Inventory Control.

The Dispensing Section has a staff of two pharmacists, three pharmacy apprentices, four technicians, and a cashier. The unit dispenses to inpatients as well as to outpatients. Approximately 900 to 1,000 prescriptions are filled daily for outpatients. Most of these are filled during the morning hours. Prescriptions are filled for the 600 inpatients also. An attempt is made to handle these requests during the afternoon hours. Drug baskets are filled every other day.

The Manufacturing Section operates with two pharmacists and three apprentices. The manufacture of ointments, liquids, and tablets is carried on here. Also all floor stock items, with the exception of some tablets, are prepackaged in this section.

The Parenteral Solution Section is now staffed by one pharmacist and two apprentices. At present, only irrigating solutions are prepared but plans are

WEN-YAH KOO, Ph.D., is Director of Pharmacy, National Taiwan University Hospital, Taipei, Taiwan.

being made to begin preparation of large volume parenteral solutions.

The assay of all drugs purchased from local manufacturers is carried on in the Analytical Section. This unit is staffed by a pharmacist and a technician.

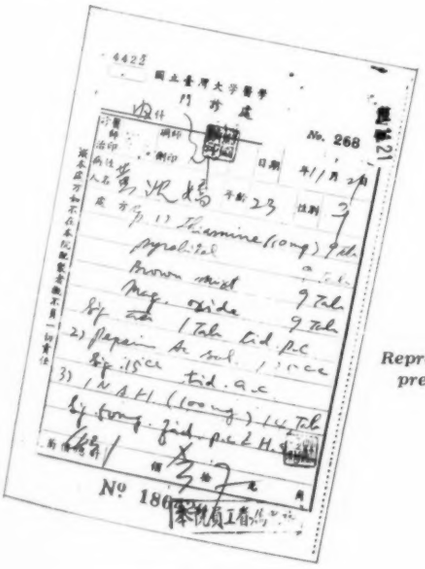
The Inventory Control Section is concerned with the receiving and storing of drugs and supplies and with matters of cost analysis.

Pricing

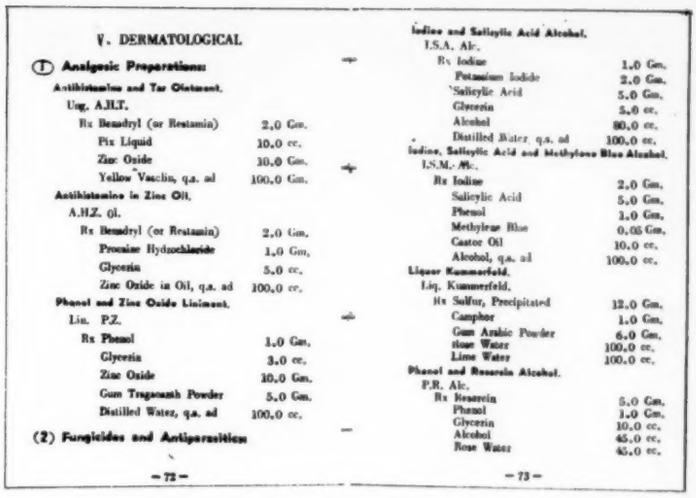
Our system of pricing may be of interest. All prices are determined by a Committee on Prices composed of the bursar, a member of the Business Department, the Director of Pharmacy, an assistant administrator, and a physician.

Our drug vouchers for inpatients are in triplicate, with an original and two carbon copies. One copy is sent to the Pharmacy, one is sent to the bursar who does all the pricing, and the third copy remains on the nursing station.

We have a minimum price of one dollar in National Taiwan currency. Above this, we charge cost. Inexpensive medications are dispensed at no charge to poor patients; however, there is a charge for expensive drugs. Employees receive a discount of 30 percent on expensive medication and all others are dispensed free of charge. Families of employees receive a 20 percent discount on expensive medication while others are dispensed free.



Representative prescription



V. DERMATOLOGICAL

① Analgesic Preparations:

Antihistamine and Tar Ointment.
Ung. A.H.T.
Rx Benadryl (or Restamin) 2.0 Gm.
Pix Liquid 10.0 cc.
Zinc Oxide 10.0 Gm.
Yellow Vaselin, q.s. ad 100.0 Gm.

Antihistamine in Zinc Oil.
A.H.Z. Oil.
Rx Benadryl (or Restamin) 2.0 Gm.
Procaine Hydrochloride 1.0 Gm.
Glycerin 5.0 cc.
Zinc Oxide in Oil, q.s. ad 100.0 cc.

Phenol and Zinc Oxide Liniment.
Lin. P.Z.
Rx Phenol 1.0 Gm.
Glycerin 3.0 cc.
Zinc Oxide 10.0 Gm.
Gum Tragacanth Powder 5.0 Gm.
Distilled Water, q.s. ad 100.0 cc.

② Fungicides and Antiparasitics

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Iodine and Salicylic Acid Alcohol.
I.S.A. Alc.
Rx Iodine 1.0 Gm.
Potassium Iodide 2.0 Gm.
Salicylic Acid 5.0 Gm.
Glycerin 5.0 cc.
Alcohol 80.0 cc.
Distilled Water q.s. ad 100.0 cc.

Iodine, Salicylic Acid and Methylene Blue Alcohol.
I.S.M. Alc.
Rx Iodine 2.0 Gm.
Salicylic Acid 5.0 Gm.
Phenol 1.0 Gm.
Methylene Blue 0.05 Gm.
Castor Oil 10.0 cc.
Alcohol, q.s. ad 100.0 cc.

Liquor Kummerfeld.
Liq. Kummerfeld.
Rx Sulfur, Precipitated 12.0 Gm.
Camphor 1.0 Gm.
Gum Arabic Powder 6.0 Gm.
tilled Water 100.0 cc.
Lime Water 100.0 cc.

Phenol and Resorcin Alcohol.
P.R. Alc.
Rx Resorcin 5.0 Gm.
Phenol 1.0 Gm.
Glycerin 10.0 cc.
Alcohol 45.0 cc.
Rose Water 45.0 cc.

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Two pages from the Taiwan Hospital Formulary

Formulary Committee

Since 1955 we have had a Formulary Committee. It may be of interest to you that our formulary contains drugs from eight different countries: China, Britain, Japan, United States, France, Germany, Italy, and Holland. This is due to the fact that all of our physicians have studied abroad. Another interesting point is that since the body weight of the average Chinese person is less than that of the average European or American, our doses are 5/6 of those in the U.S.P. or the *International Pharmacopoeia*.

analytical section

5. A view of the control laboratory

5

dispensing section

6. Outpatient waiting room and cashier's desk
7. A view of the compounding and dispensing area
8 A pharmacist checks each prescription before it is given to the patient

6

7

8

a simple method of facilitating

COMMUNICATION BETWEEN MEDICAL SERVICE REPRESENTATIVES AND PHYSICIANS

by LOUIS P. JEFFREY

A resident of the house staff writes a memorandum to a medical service representative and places it in the "Representatives' Mail Box" (File box B)

► ONE OF THE MANY FUNCTIONS OF THE CHIEF of the department of pharmacy in a hospital is to maintain a proper working relationship with the medical service representative. The role of the representative is becoming increasingly more apparent in establishing the proper liaison between the manufacturer and the pharmacist. The importance of this relationship is realized by the pharmaceutical manufacturer and emphasis by him is being placed upon sales to hospitals.

Many companies have men assigned especially to detail physicians and pharmacists in hospitals *only*. This has brought about a simple but continuous problem—that of the disposition and/or interchange of messages to the parties involved. Our relatively large medical center has many physicians who routinely practice at the hospital—250 attending staff, 150 teaching faculty, 60 residents, 40 interns and 30 fellows—many of whom the pharmaceutical manufacturers' representatives have occasion to detail or visit. Thus, the Pharmacy Office became the coordinating point among the physician, the representative and the pharmacist.

Problem

Frequently, physicians' messages were entrusted to the clerical staff of the Pharmacy to transmit to the various detail men. More often than not these communications were delivered. But there had been embarrassing situations which presented a problem under the prevailing system whereby the secretary would receive and dispatch the messages. This system was not always effective since forgetfulness, absenteeism, and inaccuracies were apt to occur.

LOUIS P. JEFFREY is Pharmacist-in-Chief, Department of Pharmacy, Albany Hospital, Albany, New York

A medical service representative inspects File Box A to see that his latest calling card is available

Communication Facilitated

With these thoughts in mind, it was decided to establish a medium of communication between the physician and the representative. Although the Pharmacy Department continues to play an important role in this plan, the responsibility has been transferred to the parties directly concerned. This predisposition led to the establishment of a filing reference system using an indexed card file box (File Box A) which contains the "calling cards" of the representatives arranged alphabetically under the letter indicating the first letter of the name of the company. For example, the card for the Lederle Laboratories' representative is filed under the letter "L". The purpose of this box is two-fold. First, these cards contain the telephone number and other pertinent information concerning the representative and the physician may call him before his next regular visit if the need be immediate. Second, it provides the physician with the name of the salesman.

A second index card file box with the same alphabetical classification procedure is used by physicians for messages to the manufacturers' representatives. The box is labeled "Representatives' Mail Box," (File Box B) and instructions are outlined on the inside of the cover to guide the physician in the proper operation of the system. The "Mail Box" is located in the outer office area used by the salesmen while they are detailing in the Pharmacy or detailing other members of the hospital staff.

Policies Governing Use of System

The following procedures have been established to assure the proper functioning of the system.

1. Paper for writing notes is in the rear of the box.
2. Physicians leaving messages for various medical service representatives, must fold the note and print the company name on the outside fold.
3. Any note left for a detail man should be filed under the first letter of the company name. For example, a message for the detail man of E. R. Squibb & Sons should be placed under "S".
4. Medical service representatives should check this box regularly.
5. Any samples which a physician may request, shall be left in the Pharmacy Office and the subsequent disposition shall be handled by this department.

Summary

The introduction of this means of communication between the physician and the medical service representative has provided a valuable service to all concerned. The physician is satisfied that the pharmacist has provided him with an additional convenient service. The representative knows that he can be contacted readily, thus fostering a smooth relationship with the physician and permitting the representative to provide better service. The pharmacist is pleased that his efforts as a "liaison officer" are well received.

The reception area of the Pharmacy Office used by physicians and medical service representatives and containing a new drug product section and current literature files for members of the Medical Center

stability of POTASSIUM IODIDE in various disguising agents

by SISTER MARY DAVID *and* C. L. HUYCK

► SATURATED SOLUTION OF POTASSIUM IODIDE, which is a commonly prescribed medicament, is characterized by an excessively salty taste. Because the solution is saturated, a single dose is contained in a few drops, which must be diluted in water before it can be taken. These facts offered several points for consideration in this investigation, which had as its primary motive a test of the stability of potassium iodide in various pre-determined disguising vehicles. It was also decided to prepare the solutions in such a manner that the usual dose could be given in a teaspoonful volume, thus offering greater convenience and possibly greater accuracy to the patient. In a previously published paper by Grote and Walker[1] it is stated that flavoring problems are seldom approached with any thought of the basic concepts of taste perception and flavoring. Such an analysis would lead directly to the selection of the flavors most suited to the particular material. Bearing this in mind, vehicles which have been previously proven effective by Purdum[2] in disguising the saline taste of ammonium chloride were used in this investigation. The vehicles were: syrup of glycyrrhiza, syrup of cinnamon, aromatic elixir, and simple syrup.

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Experimental

An aqueous solution of potassium iodide was made to contain 0.3 Gm. in 5 ml. After the salt was dissolved in a minimum amount of water, a disguising agent was added to make the desired volume. Four such solutions, each employing one of the above vehicles, were prepared and put in clear glass bottles. The solutions were assayed according to specifications of *National Formulary X* to determine the original potassium iodide content.

This method is as follows:

"To ten ml. of the solution add 15 ml. of water, 5 ml. of chloroform, and 25 ml. of hydrochloric acid. Cool to about 10°C. Titrate with 0.05 M potassium iodate T.S. until the purple color of iodine disappears from the chloroform. Add the last portions of the iodate solution dropwise, agitating vigorously and continuously. After the chloroform has been decolorized, allow the mixture to stand for five minutes. If the chloroform develops a purple color, titrate further with the iodate solution. Each ml. of 0.05 M potassium iodate is equivalent to 16.60 mg. of potassium iodide."

Each solution was then divided in three portions. Of these, one was stored in the refrigerator, one in an incubator, and the other at room temperature. During a six-week period, the solutions were removed from storage weekly, allowed to come to room temperature, and subjected to the assay described above to determine the stability of the preparations.

Results

By organoleptic testing, the vehicles were chosen in the following order of decreasing value in taste disguising ability:

TABLE 1. POTASSIUM IODIDE CONTENT, IN MG. PER 10 ML., OF FOUR VEHICLES When Stored at Three Different Temperatures for 1 to 6 weeks

VEHICLE AND STORAGE	POTASSIUM IODIDE CONTENT IN MG. PER 10 ML.						
	ORIGINAL	AFTER 1 WK.	AFTER 2 WKS.	AFTER 3 WKS.	AFTER 4 WKS.	AFTER 5 WKS.	AFTER 6 WKS.
Glycyrrhiza Syrup							
Refrigerator	625.4	624.3	623.6	623.1	623.5	623.3	623.0
Incubator	625.4	623.7	623.1	622.8	622.9	622.8	622.8
Room Temperature	625.4	624.5	623.4	623.1	622.8	622.8	622.8
Cinnamon Syrup							
Refrigerator	676.0	670.6	659.0	639.0	600.9	582.4	581.8
Incubator	676.0	669.4	647.1	605.8	599.0	580.8	579.9
Room Temperature	676.0	669.8	653.0	512.9	507.1	506.4	505.7
Aromatic Elixir							
Refrigerator	687.7	679.3	678.3	488.8	486.5	486.1	486.1
Incubator	687.7	677.4	676.3	488.8	486.2	485.7	485.0
Room Temperature	687.7	679.5	678.3	485.5	484.9	483.2	480.8
Simple Syrup							
Refrigerator	636.3	635.8	634.1	508.0	376.2	309.4	302.6
Incubator	636.3	634.1	633.5	444.3	392.8	330.7	319.9
Room Temperature	636.3	633.8	633.2	501.5	420.4	381.4	379.7

Syrup of Glycyrrhiza
Aromatic Elixir
Syrup of Cinnamon
Simple Syrup

Concerning the stability of the solutions tested, Table I gives evidence of the superiority of syrup of glycyrrhiza over the other vehicles. An important consideration on this point, however, is the fact that all the solutions were stored in clear glass bottles. Since syrup of glycyrrhiza is not a clear solution, as are the other three vehicles, the potassium iodide was protected from reaction by contact with the light, whereas free iodine was liberated from cinnamon syrup, aromatic elixir, and simple syrup. In the case of cinnamon syrup, which has a clear amber color, the decrease in concentration was only about one-half as great as in aromatic elixir, and only one-third as great as in simple syrup. The superiority of aromatic elixir over simple syrup is probably due to its high alcohol content.

Conclusion

The vehicles tested rank as follows in decreasing order:

Taste Disguising Ability	Stability
Syrup of Glycyrrhiza	Syrup of Glycyrrhiza
Aromatic Elixir	Syrup of Cinnamon
Syrup of Cinnamon	Aromatic Elixir
Simple Syrup	Simple Syrup

It would be of interest to see the results of further experimentation, using the identical vehicles but storing the solutions in green and amber bottles.

References

1. Grote, I. W. and Walker, P.: The Physiological and Chemical Aspects in the Flavoring of Medicinal Preparations, *Drug & Cosmetic Ind. 61*:755 (Dec.) 1947.

2. Purdum, W. A.: Method of Evaluating Relative Efficacy of Disguising Agents for Distasteful Drugs, *J. Am. Pharm. Assoc., Sc. Ed. 31*:298 (Oct.) 1942.

Man Wanted

WANTED—

A man for hard work and rapid promotion; a man who can find things to be done without the help of a manager and three assistants.

A man who gets to work on time in the morning and does not imperil the lives of others in an attempt to be first out of the office at night.

A man who listens carefully when he is spoken to and asks only enough questions to insure the accurate carrying out of instructions.

A man who moves quickly and makes as little noise as possible about it.

A man who looks you straight in the eye and tells the truth every time.

A man who does not pity himself for having to work.

A man who is neat in appearance.

A man who does not sulk for an hour's overtime in emergencies.

A man who is cheerful, courteous to everyone, and determined to "make good."

This man is wanted everywhere. Age or lack of experience do not count. There isn't any limit, except his own ambition, to the number or size of jobs he can get. He is wanted in every big business.

—**Industrial Management Bulletin 5/6/47**

The Professional Society

These are some of the things a professional society can do:

1. Promote standards of training.
2. Set standards of work.
3. Engage in research, including applied research.
4. Provide opportunities, through meetings, conferences, and workshops, for exchange of experiences among its members.
5. Establish periodicals and other publications for the information of its members and others.
6. Represent the profession with the public and, when necessary, with legislative and appropriating bodies.
7. Develop awards and prizes and other incentives for outstanding work.
8. Constantly strive to advance the status of the profession so that its members may be assured of adequate income, security of position, and professional recognition.

—**H. N. Calver, M.D., A Better World Through Public Health, First Public Health Working Conference, Public Health Student Society, School of Public Health, American University of Beirut, Beirut, Lebanon, May 31, 1957. Through J.A.M.A. Dec. 7, 1957**

Consulting WITH BOWLES

GROVER C. BOWLES JR., *Baptist Memorial Hospital, Memphis, Tennessee*

► Assuming the pharmacy internship is not in conjunction with an advanced degree, what advantage does serving an internship have over working as a staff pharmacist for several years?

This question was referred to Mr. Walter Frazier, Chief Pharmacist, Springfield City Hospital, Springfield, Ohio. Mr. Frazier directs an excellent pharmacy internship program which is not in conjunction with an advanced degree.

"The internship provides the advantages of being a concentrated, organized period of training which the program director obligates himself to plan as an educational experience for the trainee. During a period of even several years employment as a staff pharmacist, the emphasis is necessarily on performance, and the obligation is on the staff pharmacist who is required to produce a much greater volume of service. The time is not available for supervision, instruction, and guidance of the staff pharmacist in the manner or by the methods established in a good internship which covers in proper sequence, all elements of hospital pharmacy service. The internship should equip the recent graduate to do a better job, and to do it at an earlier point in his career."

► What functions are carried out by the Hospital Bureau of Standards and Supplies?

The Hospital Bureau of Standards and Supplies is a nonprofit purchasing organization operated by and for nonprofit institutions. It is chartered under the Membership Corporations Law of the State of New York. In addition to its buying service, the Bureau maintains a research department, reports regularly on market conditions, price changes and quality factors, and in general assists hospitals in their procurement problems. The purchasing agents in most hospitals will be familiar with this organization. Further inquiries may be directed to the Hospital Bureau of Standards and Supplies, Incorporated, 247 Park Avenue, New York 17, New York.

► Are there any "rules of the thumb" for determining a reasonable pharmacy inventory such as dollars per bed?

I know of no such "rule of the thumb" for determining a reasonable pharmacy inventory. However, it is my impression that $75 to $100 per bed would be a reasonable pharmacy inventory for most general hospitals having outpatient facilities.

The amount of money invested in pharmacy inventory varies greatly, depending to a degree on the size and type of hospital and probably more on the quality and quantity of pharmaceutical service provided.

Some pharmacies may include parenteral solutions and surgical solutions in their inventories while others do not. Surgical dressings, catheters, crutches, hypodermic needles and syringes, and other similar items when included in the pharmacy inventory will increase it significantly. Theoretically a hospital located in a metropolitan area should operate on a smaller inventory than a hospital of similar size located in a remote area some distance from many suppliers.

In general, the pharmacy inventory should be sufficient to meet the maximum needs of the hospital, eliminating or at least minimizing frequent borrowing and costly emergency orders. At the same time, there should be sufficient movement of the inventory to give a fair return on the money invested.

► Should hospitals limit the number of exhibits by pharmaceutical manufacturers?

Yes, it is essential that hospitals place some limitation on the number of pharmaceutical exhibits. Otherwise, there would be a display Monday through Friday every week of the year by some manufacturer.

There is little uniformity in the limitation of the number of exhibits by hospitals throughout the country. Some permit only one display per month while others permit as many as three displays weekly. Another commonly used method of controlling the number of displays is to limit each company to three or four displays per year.

Whatever limitations are imposed should be spelled out in the policy governing pharmaceutical exhibits and this policy should be enforced consistently and impartially.

► How much work in the pharmacy can be done by nonprofessional help?

It is difficult to state categorically how much work in the pharmacy can be done by nonprofessional help. Much will depend upon the individual, the supervisor, the management, and the type of pharmaceutical service provided. It is safe to say that a great many routine tasks such as clerical work, stock control, prepackaging, and some bulk compounding can be performed quite satisfactorily by nonprofessional help under proper supervision. One authority has stated that a properly trained nonprofessional worker can increase the productivity of a pharmacist by 50 percent. As a general rule, the number of nonprofessional workers employed in the pharmacy should not exceed the number of pharmacists on the staff.

Therapeutic Trends

edited by PAUL PARKER

Kannamycin

Broader study is indicated in the use of Kannamycin for acute infections caused by staphylococci and gram-negative bacilli resistant to other commonly used antimicrobial agents, according to a study at the Upstate Medical Center of the State University of New York in Syracuse. The study was published in *Clin. Res.* 6:279 (Apr.) 1958.

Response to intramuscular administrations of 0.5 Gm of the drug twice daily over a period of from 3 to 17 days in 6 out of 8 patients was impressive. Each of these patients had serious staphylococcal infections including carbunculosis, pneumonia, endocarditis, purulent pericarditis, and postoperative wound infections.

In another group of 7 patients with gram-negative bacillary infections the response was satisfactory in 4, and difficult to evaluate in the remaining 3.

The drug was furnished by Bristol Laboratories.

Darbid—A New Anticholinergic

Darbid, a new long-acting anticholinergic drug gave favorable clinical results in 25 of 28 patients with duodenal ulcer, post cholecystectomy syndrome, corticoid induced gastrointestinal symptoms, and irritable bowel. The chemical formula of the drug is (3-carbamoyl-3, 3-diphenylpropyl) diisopropylmethyl ammonium iodide.

The experiments indicated that a single oral dose reduced the acidity and volume of gastric secretion to zero for 3 to 4 hours; approximately 12 hours elapse before these conditions return to their former levels. The patients were started on 5 mg. of the drug every 12 hours and if this was inadequate, the dose was increased to 5 mg. three times daily or every 6 hours. Constipation developed in eight patients but the side effects were minimal.

The study was published in the *Am. J. Gastroenterol.* 29:400 (Apr.) 1958 and the material was supplied by Smith, Kline and French Laboratories.

WY-1395—Ganglionic Blocking Agent

Favorable experience was obtained in nine patients with arterial hypertension using WY-1395 (camphidonium), an asymetric bis-quaternary amine. The preliminary studies were made at Duke University and Published in *Clin. Res.* 6:232 (Apr.) 1958.

The patients were treated on an outpatient basis using 40 to 80 mg. of the drug orally in two divided doses. Maintenance dosage had to be gradually increased in six patients. Minimal side effects consisted of dizziness, dry mouth, blurring of vision, and photophobia.

The drug was furnished by Wyeth Laboratories.

Methylated Mylerans CB-2348 And CB-2348K For Leukemia And Neoplastic Diseases

Dimethyl Myleran (CB-2348) or its isomer (CB-2348K) are effective soluble alkylating agents in the treatment of chronic granulocytic leukemia, inducing a prompt predictable response following parenteral administration.

Intravenous administration of 0.1 to 0.8 mg./Kg. body weight to 11 patients with chronic granulocytic leukemia elicited clinical response which lasted 2 to 12 weeks. Intraperitoneal administration of 0.5 to 1.2 mg./Kg. of body weight to five patients with abdominal ovarian carcinomatosis caused regression of ascites formation and profound cytologic abnormalities and reduction in tumor cell number.

The report was published in *Clin.Res.* 6:197 (Apr.) 1958.

Vancomycin—New Bactericidal Antibiotic

Experiments at the Mayo Clinic, which were published in *Clin. Res.* 6:279 (Apr.) 1958, indicate that penicillin-resistant micrococcal endocarditis may be treated successfully with Vancomycin. The drug was used over a period of 20 months as the sole therapeutic agent in six patients with endocarditis due to coagulase-positive micrococci. One patient died early in the treatment course and the infection in the others was controlled. Toxicity consisted of phlebitis of varying degree in all patients. Other side effects consisted of skin rash, moderate deafness, and possibly drug fever. The duration of therapy was from 2 to 4 weeks and 0.5 Gm. of the drug was given intravenously every 6 hours over a period of 3 to 4 minutes.

SU-3118—Antihypertensive Agent

Carbthoxysyringoyl methylreserpate or SU-3118 was found to be an effective antihypertensive agent, which may be of value particularly in those patients unable to tolerate reserpine. One mg. of SU-3118 was as effective as 0.25 mg. of reserpine.

The study included 28 patients with sustained diastolic hypertension. The drug was furnished by Ciba and the report published in *Clin.Res.* 6:232 (Apr.) 1958.

CIBA 10870 For Parkinsonism

Preparation No. 10870, which was furnished by Ciba, Ltd., was recently tried in a series of 16 patients with Parkinsonism according to a report in the *Brit. Med. J. 5076*:928 (Apr. 19) 1958. The drug relieved some of the most troublesome symptoms in every case, and in some cases produced very good results.

Preparation 10870 is 3-phenyl-(β-diethylaminoethyl)-2,6-dioxopiperidine hydrochloride. It was used in 2.5 mg. tablets which were administered six times daily to each patient. During the trial period the drug was alternated in use with a placebo which was indistinguishable to either the patients or physicians. The condition of each patient was scored according to the effect of the drug on tremor, rigidity, dribbling, oculogyric crises, facial mask, walking, feeding, reading, and bladder and bowel functions. The general impression was that the new preparation was equal if not superior to any therapy in current use.

Mental confusion occurred in one case and disappeared when the drug was stopped. No blood dyscrasias were observed during the trial period of 14 days. Further trial is needed to confirm whether prolonged administration is safe.

Nacton (I.S. 499)

Twenty-three hospitalized patients with duodenal ulcer and two with gastric ulcer were given six-hourly doses of nacton, (1-methyl-2-pyrolidyl) methyl benzilate methyl methosulfate, a drug with an atropine-like action of long duration. For each patient the final dose chosen was that which produced no side effects. The changes in gastric secretion of acid were studied with test meals. Fourteen of these patients were later treated as outpatients and studied with further test meals.

In the 23 patients it was possible to reduce the gastric secretion of acid in response to test meals during the period between two hours and eight hours after giving the nacton. For the second 10 patients the secretion of acid was reduced to about half of the control value. Since its has been shown that in groups of patients with duodenal ulcer the gastric secretion of acid in response to test meals is about doubled as compared with that in healthy subjects, the drug is thought to correct this abnormality. The maximal inhibition of gastric secretion was often obtained with doses that produced no side effects. The fall in gastric secretory response to test meals persisted for up to three days after discontinuance of the drug.

The drug is contraindicated in patients in whom a short period of tachycardia, urinary retention, constipation or pupillary dilatation must be avoided. Side effects may be eliminated by a one step reduction in the dosage schedule or at least by discontinuance of the drug for a few days then restarting it.

Nacton was supplied by C. L. Bencard, Ltd., and the report was published in the *Brit. Med. J. 5078*:-1030 (May 3) 1958.

Zoxazolamine As A Uricosuric Agent

Zoxazolamine, which is available under the trade name Flexin from McNeil Laboratories, Inc., has recently been preliminarily reported to have potent uricosuric action in doses of 750 mg. daily. It has a rapid onset of action, comparing favorably with probenecid and the salicylates. It has few side effects in this dosage range and only occasional gastrointestinal symptoms were noted.

The precautions are the same as those advisable when administering any potent uricosuric agent—namely, to ensure a good urinary output and to alkalinize the urine, particularly in patients with hyperuricemia or a history of renal colic or passage of urate stones, or both.

The report was published in the *New Eng. J. Med. 258*:894 (May 1) 1958.

Glycine-Alanine-Glutamic Acid Combination

The value of glycine-alanine-glutamic acid combination (Prostall capsules) for symptomatic relief of benign prostatic hypertrophy was discovered accidentally in an allergy clinic. Allergy patients with enlarged prostates and associated urinary symptoms, to whom this amino acid medication was given because of their allergy, unexpectedly reported prompt and rather spectacular relief of their prostatic symptoms.

In a blind controlled study of 40 cases of diagnosed benign prostatic hypertrophy (referred or checked by a urologist), the use of glycine-alanine-glutamic acid capsules for a period of three months reduced the prostatic enlargement in 92%, to normal size in 33%. Nocturia was relieved in 95% of cases (completely in 72%), urgent urination in 81%, frequency in 73%, discomfort in 71%, and delayed micturition in 70%. No comparable improvement was observed in the controls who were given a placebo. No untoward effects were observed in any case. This study was reported in *J. Maine Med. Assoc. 49*:99 (March) 1958.

The modus operandi appears to be an anti-edemic (diuretic) action whereby edematous swelling affecting the prostate gland and surrounding perineal tissues is reduced. A special metabolic activity may be a factor.

Prostall capsules contain 6¼ gr. of a mixture of glycine, alanine and glutamic acid. The dosage used was 2 capsules three times daily for the first two weeks, thereafter 1 capsule three times daily. The drug combination was supplied by Metabolics Products Corp., Boston.

Timely Drugs

Dramamine-D

COMPOSITION: Dimenhydrinate (Dramamine) and dextro amphetamine.
INDICATIONS: For controling nausea or dizziness while keeping the patient alert.
DOSAGE: One or two tablets every 4 to 6 hours.
PREPARATIONS: Tablets containing dimenhydrinate 50 mg. and dextro amphetamine 5 mg.
PACKAGING: Bottles of 100 and 1,000 tablets.
SUPPLIER: G. D. Searle & Co.

Equalysen

COMPOSITION: Meprobamate (Equanil) and pentolinium (Ansolysen) tartrate.
INDICATIONS: For management of emotional and vascular aspects of essential hypertension; lowers blood pressure, reduces tensions associated with hypertension, relieves emotional symptoms, and enhances over-all clinical response.
SIDE EFFECTS AND CONTRAINDICATIONS: Possible postural hypotension or syncope, resulting from too rapid or too great a reduction in blood pressure, may be prevented by careful adjustment of dosage; rarely, allergic reactions; contraindicated in organic pyloric stenosis, recent myocardial infarction, or severe coronary insufficiency; should be used with caution in patients with severe renal disease.
DOSAGE: One tablet every 8 hours, taken at the same time daily, initially; maximum total daily dose is 12 tablets.
PREPARATIONS: Scored tablets containing meprobamate 200 mg. and pentolinium tartrate 20 mg.
PACKAGING: Bottles of 50 tablets.
SUPPLIER: Wyeth Laboratories.

Fedrazil

COMPOSITION: Pseudoephedrine (Sudafed) hydrochloride and chlorcylizine (Perazil) hydrochloride.
INDICATIONS: Prophylaxis and treatment of respiratory tract congestion and associated allergic manifestations.
SIDE EFFECTS AND CONTRAINDICATIONS: Should be used with caution in patients with hypertension; produces low incidence of drowsiness.
DOSAGE: Adults and children over 8 years of age, one or two tablets three times daily; children 2 to 8 years of age, one tablet daily or as required.
PREPARATIONS: Sugar-coated tablets containing pseudoephedrine hydrochloride 30 mg. and chlorcyclizine hydrochloride 25 mg.
PACKAGING: Bottles of 100 tablets.
SUPPLIER: Burroughs Wellcome & Co.

Fleet Disposable Enema, Pediatric

COMPOSITION: Sodium biphosphate and sodium phosphate.
INDICATIONS: Routine enema for infants and children; for diagnostic and preoperative cleansing and general postoperative use; for relieving fecal or barium impactions.
DOSAGE: Contents of unit, or as directed by physician.
PREPARATIONS: 2¼ ounce disposable units containing in each 100 ml.: sodium biphosphate 16 Gm. and sodium phosphate 6 Gm.
PACKAGING: Single units
SUPPLIER: C. B. Fleet Co.

Hydrocortisone-Neomycin Ointment

COMPOSITION: Neomycin, as the sulfate, and hydrocortisone acetate.
INDICATIONS: Topical, for treatment of allergic and seborrheic dermatitis; ophthalmic, for inflammatory conditions of the anterior segment of the eye, allergies, trauma, etc.
SIDE EFFECTS AND CONTRAINDICATIONS: Ocular herpes simplex and ocular tuberculosis.
DOSAGE: Topically, apply to area one to three times daily with gentle massaging, after cleansing the area; ophthalmically, apply to eye lid once during the day and before retiring.
PREPARATIONS: Neomycin sulfate 3.5 mg. and hydrocortisone acetate 10 mg. per Gm., in a mild, nonirritating ointment.
PACKAGING: Tubes of ⅛ ounce.
SUPPLIER: Paul Maney Laboratories.

Ioclide

COMPOSITION: Iodophor.
INDICATIONS: A concentrated, detergent iodine complex, nonirritating and nonstaining for most products; for disinfection of general medical instruments and materials, surgical and hospital instruments, thermometers, rubber goods, plastics, glass and enamel ware, and antisepsis for surgeons' and nurses' hands.
TOXICITY: Orally, both concentrate and dilution relatively nontoxic from the acute oral toxicity standpoint; from standpoint of skin irritation and sensitization, it is neither a primary irritant nor a sensitizer.
DILUTIONS: A 26 ml. bottle makes up to 2½ gallons of germicide.
PREPARATIONS: Active ingredients include polyethoxopolypropoxypolyethoxyethanol-iodine complex 15.8% nonylphenoxypolyethoxyethanol-iodine complex 15.2%, hydrogen chloride 0.2%, and inert ingredients.
PACKAGING: Bottles of 26 ml., and polyethylene bottles of one pint and one quart.
SUPPLIER: Clay-Adams, Inc.

Lofenalac

COMPOSITION: Low phenylalanine food.
INDICATIONS: Dietary management of phenylketonuria; helps prevent development of mental deficiency due to phenylketonuria by limiting the intake of the amino acid, phenylalanine, in the diet.
SIDE EFFECTS AND CONTRAINDICATIONS: Since a minimum amount of phenylalanine is absolutely necessary for bodily function, dietary management of phenylketonuria should be closely supervised by a physician to insure this minimum amount being obtained by the patient.
DOSAGE: As directed by physician
PACKAGING: Cans containing 2½ pounds.
SUPPLIER: Mead Johnson & Co.

Medache

COMPOSITION: Phenyltoloxamine dihydrogen citrate, salicylamide, acetophenetidin, and caffeine.
INDICATIONS: Analgesic and calmative for the relief of tension and other non-vascular headaches, fever, pain and discomfort of colds and upper respiratory infections, hay fever and other allergic reactions, and dental pain.
DOSAGE: Two tablets three times daily.
PREPARATIONS: Tablets containing phenyltoloxamine dihydrogen citrate 44 mg. (equivalent to 25 mg. phenyltoloxamine), salicylamide 150 mg., acetophenetidin 150 mg., and caffeine 32 mg.
PACKAGING: Bottles of 100 tablets.
SUPPLIER: Organon, Inc.

Meloxine

GENERIC AND CHEMICAL NAMES: Methoxsalen; 8-methoxypsoralen.
INDICATIONS: Increases production of melanin pigment in skin when exposed to ultraviolet light; promotes protection against burning and blistering following exposure to sunlight; increases and accelerates tanning; reduces scaling and peeling.
SIDE EFFECTS AND CONTRAINDICATIONS: If administered to patients with vitiligo, liver function tests should be performed monthly; occasionally, gastric discomfort, nausea, nervousness, insomnia, or depressed mood; contraindicated in presence of liver disease.
DOSAGE: Adults, 20 mg. taken two hours before exposure to sunlight, for 14 consecutive days; children under six years of age, 10 mg. daily.
PREPARATIONS: Tablets of 10 mg., coated.
PACKAGING: Bottles of 28 tablets.
SUPPLIER: Upjohn Co.

Migral

COMPOSITION: Ergotamine tartrate, cyclizine (Marezine) hydrochloride, and caffeine.
INDICATIONS: For relief of pain, nausea and vomiting associated with migraine headache.
SIDE EFFECTS AND CONTRAINDICATIONS: Not more than 6 tablets should be taken during a single attack, nor more than 10 tablets per week; contraindicated in presence of peripheral vascular disease, coronary disease, hypertension, impaired renal or hepatic function, and pregnancy.
DOSAGE: Two or three tablets at first sign of migraine syndrome; if necessary, one or two tablets 30 minutes after initial dose.
PREPARATIONS: Sugar-coated tablets containing ergotamine tartrate 1 mg., cyclizine hydrochloride 25 mg., and caffeine 50 mg.
PACKAGING: Bottles of 20 and 100 tablets.
SUPPLIER: Burroughs Wellcome & Co.

RA-Test

INDICATIONS: Rapid slide screening test for rheumatoid arthritis to detect the presence of rheumatoid factor in the serum of rheumatoid arthritis patients; a slide modification of the latex fixation test.
PROCEDURE: A drop of the patient's diluted serum is mixed with one drop of latex-globulin reagent on glass slide; positive reactions (well-defined clumps) are clearly visible to the naked eye in a few seconds; negative serums remain clear.
PREPARATIONS AND PACKAGING: Kit containing latex-globulin reagent, positive and negative control serums, glycine-saline buffer diluent, and a divided glass slide; sufficient material for at least 100 tests. Test components are also available separately.
SUPPLIER: Hyland Laboratories.

Ryprogen Test

COMPOSITION: Lyophilized Reiter protein antigen.
INDICATIONS: For serodiagnosis of syphilis.
PROCEDURE: Each ampul contains lyophilized Reiter antigen which, when dissolved in 1 ml. of distilled water and diluted 1:80, is sufficient reagent to perform about 800 1/5 volume qualitative Kolmer complement fixation tests, or about 100 1/5 volume quantitative Kolmer tests; if the undiluted Kolmer test is used, 160 qualitative or 20 quantitative tests can be made with one ampul.
PREPARATIONS: Ampuls of 10 ml.
SUPPLIER: Organon, Inc.

Sinaxar

CHEMICAL NAMES: Styramate; 2-hydroxy 2-phenylethyl carbamate.
INDICATIONS: Skeletal muscle relaxant, indicated in low back aches, muscle strains and pains, muscular rheumatism, muscular spasms, etc.
DOSAGE: Adults, 0.2 to 0.4 Gm. three times daily.
PREPARATIONS: Tablets of 0.2 Gm.
PACKAGING: Bottles of 50 tablets.
SUPPLIER: Armour Laboratories.

Suvren

CHEMICAL NAME: Captodiamine hydrochloride.
INDICATIONS: Nonhypnotic stabilizer, for emotionally conditioned disorders such as irritable or spastic colon, mucous colitis, nervous diarrhea, psychogenic asthma, mild anxiety and tension.
DOSAGE: Adults—100 mg. 3 times daily with meals and at bedtime if necessary; children—50 mg. 3 times a day with meals and 100 mg. at bedtime.
PREPARATIONS: Tablets of 50 mg. and 100 mg.
PACKAGING: Bottles of 100 and 1,000 tablets.
SUPPLIER: Ayerst Laboratories.

TAO

COMPOSITION: Triacetyloleandomycin with glucosamine.
INDICATIONS: Antibiotic for use against common infections caused by staphylococci, streptococci, pneumococci, gonococci, and hemophilus influenzae.
DOSAGE: Adults, 0.25 Gm. four times daily; children, proportionately less.
PREPARATIONS: Capsules of 0.125 Gm. and 0.25 Gm.
PACKAGING: Bottles of 60 capsules.
SUPPLIER: J. B. Roerig and Co.

Temaril

CHEMICAL NAME: Trimeprazine: [d1-10-(3-dimethylamino-2-methylpropyl)-phenothiazine].
INDICATIONS: For oral treatment of pruritus regardless of etiology, including pruritus vulvae and ani, neurodermatitis, infantile eczema, urticaria, contact dermatitis, and others not necessarily of dermatologic origin.
SIDE EFFECTS AND CONTRAINDICATIONS: Rarely, mild and temporary drowsiness, dizziness, dryness of mucous membranes, and gastrointestinal upsets.
DOSAGE: Adults, 2.5 mg. two times daily after meals and 5 mg. at bedtime; children from 6 to 12 years of age, 2.5 mg. at bedtime usually, and 2.5 mg. twice daily after meals if necessary.
PREPARATIONS: Tablets containing 2.5 mg. as the tartrate salt.
PACKAGING: Bottles of 50 tablets.
SUPPLIER: Smith, Kline & French Laboratories.

THE LAW
of hospital pharmacy

edited by GEORGE F. ARCHAMBAULT

► I HAVE BEEN ASKED MANY TIMES by hospital administrators, hospital pharmacists, nurses, Department of Public Health and State Board members, and inspectors, the differences, if any, between "drug dispensing" (a pharmacy act) and "drug administration" (a nursing act).

Because the subject of adequate and safe pharmaceutical practice in hospitals is today receiving so much attention, I thought it well to start this column with my opinion on this subject. I hope you find this opinion helpful to you and your associates. In future columns, I hope to bring to you information on recently enacted legislation and decisions of the courts that are of interest to hospital pharmacists as well as short discourses on some points of law that have special application to our specialty. I would appreciate hearing from you as to your opinion on a column of this type and what specific subjects you would like to have discussed. You may write to me in care of the Editor. Obviously, specific personal legal problems cannot be handled either by the column or by communication.

I would point out at the outset that law is a complex specialty made so because of the existence of a set of Federal laws, forty-eight sets of state laws, and many county and municipal laws and regulations. This column can only hope to discuss principles of law in general or the law applied to a particular fact situation in a given state. When specific legal questions arise, one should always consult an attorney, competent in the local law.

Now let us discuss the issue of "drug dispensing" and "drug administration." Each state must have, as I see it, as safe a practice of pharmacy for its hospitals and rest homes as it has for its drug stores. "Limited Practice Acts" for medicine, nursing, pharmacy and dentistry cannot, in the interest of the public safety, be allowed to develop in this country. To guarantee safe pharmacy and drug distribution practices in the nation's hospitals and nursing homes will take the best thinking of all of us, especially of leaders in pharmacy, in government and in hospital administration.

There are two points I would emphasize: (1) pharmacy helpers, ward attendants, and others must know and understand that they work only under the *direct and immediate supervision of pharmacists* if they assist in pharmacy activities and (2) hospital authorities must be careful not to assign to nursing duties those acts purely of a pharmacy nature. Just recently, Washington State had a revision to its Code (Chapter 18.8, Revised Codes of Washington) that was aimed to protect the nurse from violating the *State's Medical Practice Act* by expressly allowing her "under the general direction of a licensed practitioner . . . to administer prescribed drugs, injections, inoculations, tests of treatment whether or not *piercing of tissues* is involved."

Drug Dispensing, as we all know, is a function that is by custom, tradition and law, restricted to licensed practitioners of pharmacy. It is distinguished from *drug administration,* an act associated with the practice of nursing, in that (1) *drug dispensing* involves the issuance of one or more doses of a medication in containers other than the original, such new containers being properly labeled by the dispenser as to contents and/or directions for use as indicated by the prescriber *or* (2) drug dispensing is the issuance of a medication in its original container with a pharmacy prepared label that carries to the patient the *signa* of the prescriber as well as other vital information *or* the package carries a label prepared for nursing station use in a hospital. The contents of the container may be for one patient (such as an individual prescription) or for several patients (such as a nursing station medication container).

In *drug administration,* a nursing act, a single dose is administered to a patient by the nurse as a result of an order of a physician or dentist. Should a pharmacist, for example, prepare a prescription or medication order of a radioactive medication for a particular patient *and also* administer this medication to that patient, that pharmacist is in violation of the Nursing Practice Act. He is liable both criminally, and civilly, as would be the hospital that would allow such a practice.

In hospital practice, to avoid charges of violation of the Pharmacy Practice Act, of the several states, one must be careful to discern between *drug dispensing* and *drug administration.* The removal from the pharmacy to the nursing station of a single dose of a drug from the original container by a nurse for a specific patient falls under *drug administration* and is legal. However, the filling or refilling of a nursing station medication container or a properly labeled, prepackaged, nursing station medication container or a similar prepackaged and properly labeled medication from a pharmacy emergency or night service unit with the drug called for is *dispensing* and can be engaged in legally only by a licensed pharmacist, under the Pharmacy Practice Act of the state. Also, it can be argued that the removal of the original container from the storeroom or pharmacy to a nursing station is *drug administration* and is a legal nursing act, though not a practical one. Note that *no* transfer from container to container occurs nor is there a possibility of label error. *The public health point at issue revolves around patient safety and error control. Should a nurse remove the single dose from the wrong container while at the pharmacy (drug administration), there is no greater liability involved than the doing of the same act at a nursing station.* However, the filling of a nursing station medication container falls into the pharmacy act of *dispensing* in that error here could injure *all* patients who subsequently receive medication from that container. Because of the seriousness of this pharmacy practice violation in hospitals and nursing homes in many states, it is imperative that individual State Boards, Departments of Health, and state hospital, nursing home, and pharmaceutical associations take the necessary action to clarify who in state government shall enforce the pharmacy practice act and drug control activities in hospitals. They must see to it that inspection officials are properly trained to inspect hospital and nursing home services. Several states, I understand, are working or have worked on such regulations, for example, Washington, Michigan, Maryland, California, New York, Delaware and Indiana.

R. N., a journal for nurses (May and June 1958) and *Hospitals* (May 16, 1958) each contains splendid articles on the handling of drug orders during hours when the pharmacy is closed and the legal perils involved. The articles in these two journals should be on the "must" reading list of all hospital pharmacists.

3-Methoxy Norepinephrine

An amine, or nitrogen-containing chemical, closely related to the adrenal hormone norepinephrine, has been found in human tissues for the first time by investigators at the National Heart Institute in Bethesda, Maryland. The new amine, 3-methoxy norepinephrine, is of basic interest because it is derived from norepinephrine and may play a role in the normal metabolism of this physiologically important amine in man.

Dr. Albert Sjoerdsma and William King, of the Laboratory of General Medicine and Experimental Therapeutics, and Dr. Sidney Udenfriend and Lemuel Leeper, of the Laboratory of Clinical Biochemistry, found the new amine in norepinephrine-producing adrenal tumors (pheochromocytomas) removed from patients with hypertension which had resulted from the tumors.

Norepinephrine (and its precursors and derivatives) is of particular interest to the Heart Institute, not only in connection with its well-known stimulating effects on the heart and blood pressure, but also because Heart Institute findings have implicated brain norepinephrine, together with another amine—serotonin—in the brain, in the central regulation of the two divisions (sympathetic and parasympathetic) of the autonomic nervous system. Thus "automatic" functions such as blood pressure, heart rate, and emotional states appear to be regulated by release in the brain of the two amines, norepinephrine and serotonin.

During their studies of the metabolism and functions of these amines, Drs. Sjoerdsma and Udenfriend became interested in the 3-methoxy derivative when investigators at the University of Utah* reported a 3-methoxy end product of norepinephrine metabolism in the urine of patients receiving norepinephrine injections to support failing blood pressure. Dr. Julius Axelrod, also of the National Institutes of Health, subsequently found, in rat liver, enzymes that converted norepinephrine to 3-methoxy epinephrine**. These discoveries prompted the Heart Institute investigators to look for the 3-methoxy derivative in human tissues. They found 3-methoxy norepinephrine, as well as the usual large quantity of the parent amine, norepinephrine, in the adrenal gland tumors.

Their continuing studies on these amines are aimed at learning what role they may have in the body—especially what part they play in the control of blood pressure and heart function.

*The Utah findings, by M. D. Armstrong, A. McMillan, and K. N. F. Shaw appear in *Biochemica and Biophysica Acta* (*25*:422, 1957).

**Dr. Axelrod's findings are reported in *Science* (*126*:400, 1957).

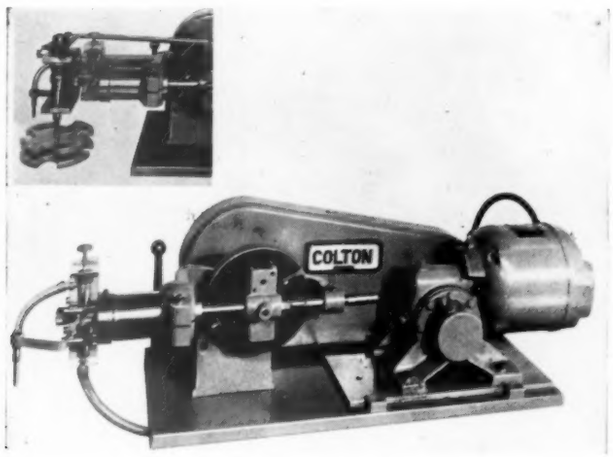
Notes & Suggestions

edited by CLIFTON J. LATIOLAIS

LIQUID FILLER

The "Little Giant" Liquid Filler* is operated by a manual control at the side which operates a single revolution clutch. Extremely compact, the filler can be bench-mounted or set up on top of a barrel or container of liquid for quick filling. Addition of a rotary index table adapts it for conveyor line filling.

The two models are designated as the Model 117 which is a single metering cylinder, single nozzle design with a maximum fill capacity of eight (8) fluid ounces per stroke; the Model 119 has two metering cylinders and two nozzles with a maximum fill capacity of eight



(8) fluid ounces from each nozzle and can be equipped with a manifold that permits a maximum fill capacity of 16 fluid ounces from a single nozzle. The filler has an accuracy of less than 1 percent variation. All sizes or types of bottles, jars or cans can be filled from this unit. As many as 40 bottles can be filled per minute.

The unit is powered with a 1/6 H.P. geared-head motor. Amount of liquid delivery per stroke is simply adjusted by changing the stroke of a crank mechanism.

*Arthur Colton Company, 3400 E. Lafayette Ave., Detroit 7, Michigan

MODIFIED WRIGHT'S STAIN

The following formula and procedure for preparing Modified Wright's Stain was published in the *Medical Technologists Bulletin, 8*:25 (Jan.-Feb.) 1957 by D. A. Fuccillo:

Wright's stain, powder	3.0 Gm.
Giemsa's stain, powder	0.3 Gm.
Glycerin	30.0 ml.
Monobasic potassium phosphate	1.6 Gm.
Dibasic sodium phosphate	3.2 Gm.
Methyl alcohol	970.0 ml.
To make	1,000.0 ml.

Triturate the two stains with the glycerin to a light paste. Dissolve the two phosphates in the methyl alcohol. Add this buffer solution to the stain-glycerin paste and agitate for about 20 minutes. Allow to stand for 24 hours, then filter.

The addition of Giemsa's stain to Wright's stain produces a staining effect of higher intensity. The buffering agents prevent the progressive oxidation of the alkaline solution experienced with the original formula. Thus, Modified Wright's Stain is a stable solution which does not produce a scum.

OINTMENT TUBES, POLYETHYLENE

Polyethylene ointment tubes are available from Bradley Container Corporation, Maynard, Massachusetts. The inside portion of the polyethylene tubes are specially coated which provides compatibility with a wide range of products. Containers are manufactured in white or transparent polyethylene. Tubes are available in sizes ranging from 1/8 ounce to 10 ounce capacity.

ANTIPERSPIRANT CREAM

The following formula for a satisfactory antiperspirant cream with aluminum chlorohydrate is reported in *Drug and Cosmetic Industry 81*:178 (Aug.) 1957.

Stearic Acid	10.0
Cetyl alcohol	2.0
*Polyoxyethylene Stearate	3.0
Sorbitol solution 70%	10.0
Water	55.0
**Aluminum chlorohydrate	20.0
Perfume, to suit	
To make	100.00

*Available as Myrj 59, Atlas Powder Company, Wilmington, Del.

**Reheis Company, Inc., Berkeley Heights, N. Y.

VANCIDE 89 RE

Vancide 89 RE is a bactericidal and fungicidal agent indicated for use in formulations designed to combat dandruff, athlete's foot, dermatitis, and other skin diseases caused by bacteria and fungi. A complete description of the properties of Vancide RE is outlined in a five page Bulletin 116 available from R. T. Vanderbilt Company, Specialties Department, 230 Park Avenue, New York 17, N. Y.

NECTADON (NOSCAPINE)

Merck and Company has issued a twenty-six page booklet on Nectadon. Nectadon is Merck's trade name for noscapine, formerly called narcotine. It is a potent, non-addictive antitussive. The booklet includes a summary of clinical and pharmacological effects, chemical and physical properties as well as suggested formulations for tablets, capsules, lozenges, suspensions and syrups. The company claims noscapine to be at least as effective as commonly used cough suppressants and in some cases more potent and faster acting than codeine with the advantage of being non-addictive. The booklet is available upon request from Merck and Company, Inc., Rahway, New Jersey.

BOOKLET ON POLYVINYLPYRROLIDONE

A detailed, 48-page booklet on PVP (polyvinylpyrrolidone) describing its chemical and physical properties and applications has been published by Antara Chemicals, General Aniline and Film Corporation, 435 Hudson Street, New York 14, New York.

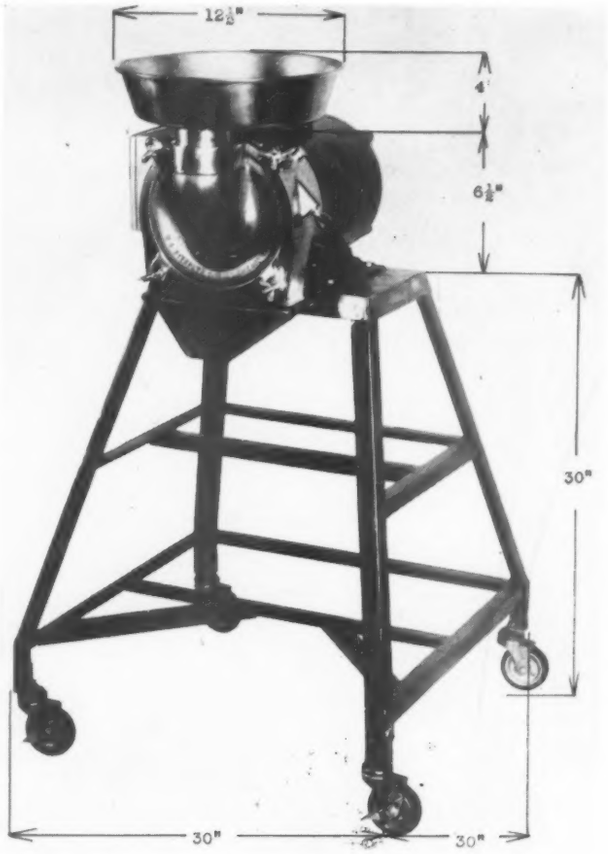
Among the uses discussed, the hospital pharmacist may be particularly interested in cosmetics, pharmaceuticals, adhesives, detergents, soaps, inks, protective coatings, etc. PVP's film forming properties, compatibility, stability, detoxifying properties, physiological acceptability, and protective colloid action are described.

VEGETABLE COLORING AGENTS

S. B. Penick is marketing a new line of vegetable coloring agents in the yellow to orange range. These colors are extracted from annatto seed. Both water-soluble and oil-soluble types are available in microcrystalline, powder, and liquid forms. These coloring agents are safe for use in foods, drugs and cosmetics. A 12-page brochure entitled "Anattene" is available upon request from S. B. Penick and Company, 50 Church Street, New York 8, New York.

HOMOLOID MACHINE

The Model J Homoloid (Fitzmill)* is a multi-purpose machine adapted for processing dry or liquid formulations. It is useful in reducing particle size in emulsions, colloidal suspensions, lotions and ointments and also for granulating chemicals, tablet masses or slug granulation. The fineness of particle size is determined by the diameter of screen perforation, the choice of blade, and speed of the rotor.



The fabricated and machined parts are made of stainless steel; castings are from non-corrosive nickel-silver alloys or stainless steel. It is available with 1½, 3 or 5 H.P. motors rotating at 3600 RPM. The screw feed permits the processing of heavy liquids and semi-plastic materials which cannot be introduced into the machine by gravity feed. Available with a variable speed, power or manually-operated screw feed, the power or manual screw feed hopper has a 20-quart capacity.

*W. J. Fitzpatrick Company, 1001 W. Washington Boulevard, Chicago 7, Illinois

SUPERVISOR'S GUIDE TO JOB INSTRUCTION

This pamphlet is designed primarily for use by supervisors in planning, developing and administering skills training programs to meet the needs of the Department of the Army. It should prove useful to others who have a training responsibility. (1957. 25 p. il.) Order from Government Printing Office, Washington as Catalog No. D 101.37:42-A, 25c.

SELECTED PHARMACEUTICAL ABSTRACTS

and summaries of other articles interesting to hospital pharmacists

edited by CLIFTON J. LATIOLAIS and LEO F. GODLEY

DIFFUSION FROM OINTMENT BASES

A Comparative Study of Surfactant Influence on the Release of Ions from an Emulsified Ointment Base, Stark, J. F., Christian, J. E. DeKay, H. G., J. Am. Pharm. Assoc. (Sci. Ed.) 47:223 (Mar.) 1958.

An apparatus for the *in vitro* measurement of rate of release of ions from a hydrophilic ointment base is described. The method measured the rate of diffusion of I^{131} and $Hg^{2/3}$ through a cellulose membrane separating a layer of hydrophilic ointment, U.S.P., containing sodium radio-iodine (I^{131}) or mercury ($Hg^{2/3}$) nitrate, from a circulating physiological solution containing the chlorides of sodium, potassium, calcium, and magnesium. The radioactivity of the circulating solution was measured by means of a scaler with a bismuth cathode side-window counter tube incorporated in the apparatus.

It was concluded that, in general, maximum release of a medicinal agent may be expected from a base emulsified with a *nonionic* surfactant in as *low* a concentration as is feasible to impart the required emulsion character and stability; however, the release of a given medicament is dependent upon many factors and each formulation must be considered individually for medicament release properties.

WARREN E. MCCONNELL

BORIC ACID AS AN ANTIBACTERIAL

A Bacteriological Evaluation of Boric Acid - Water - Sorbitol Solutions, Sciarra, J. J., Shay, D. E., and Autian, John, J. Am. Pharm. Assoc. (Sci. Ed.) 47:180 (Mar.) 1958.

The effects of various concentrations of sorbitol on the antibacterial activity of aqueous boric acid solutions were studied. Saturated boric acid solutions, 5% to 20%, containing various concentrations of sorbitol were prepared at 25°. Antibacterial activities of these solutions were compared using the agar plate method and *Micrococcus pyogenes* var. *aureus* as the test organism. Results were reported as millimeters of inhibition of bacterial growth on the agar plates. The pH of each solution is also reported.

Results indicated that the maximum antibacterial activity of boric acid occurred at about a 5% concentration. No relationship was found to exist between the concentration of boric acid in sorbitol solution and the antibacterial activity, nor between the pH and antibacterial activity. Boric acid in sorbitol solution was found to be bacteriostatic rather than bactericidal.

WARREN E. MCCONNELL

STERILITY OF OPHTHALMIC OINTMENTS

A Bacteriological Study of Ophthalmic Ointments, Vander Wyk, R. W., Granston, A. E., J. Am. Pharm. (Sci. Ed.) 47:193 (Mar.) 1958.

Noting the fact that little has been published regarding the testing of sterility of ophthalmic ointments, these authors report a simplified method which they used for testing the level of bacterial contamination of 83 samples of commercial ophthalmic ointments. Blood agar plates were used as the culture media and results were expressed as the number of bacteria per gram of ointment. Only 12 of the commercial ointments were bacteria-free according to this test method.

A specially formulated ointment base was used as the vehicle for testing the bactericidal effectiveness of four different antibacterial agents. Results showed that, of the agents tested, 0.5% benzyl alcohol was the most effective. Benzyl alcohol, 0.5%, added to each of six different extemporaneously-prepared ophthalmic ointments and tested by the method reported, reduced the number of bacteria per gram by 97.1%.

WARREN E. MCCONNELL

COLOR STABILITY IN PHARMACEUTICALS

A Study of the Effect of Certain Pharmaceutical Materials on Color Stability, Kuramoto, Roy, Lachman, Leon, and Cooper, Jack, J. Am. Pharm. Assoc., (Sci. Ed.) 47:175 (Mar.) 1958.

This study was undertaken in an attempt to disclose the mechanism of the reaction responsible for color fading in pharmaceutical preparations in order to formulate products more stable to these color changes.

Because it was found to be very unstable in the presence of many pharmaceutical ingredients or when subjected to different environmental conditions, the certified dye, FD&C Blue No. 2, was used in this investigation. The rate of fading of this dye in solution was studied. The dye was combined in solution at different pH values with various concentrations and combinations of reducing and non-reducing sugars, sugar alcohols, antioxidants, and other compounds.

The results indicated that the fading of FD&C Blue No. 2 appears to be potentiated by reducing sugars; that, in general, the addition of antioxidants does not appreciably retard the rate of fading of the color in the presence of dextrose; that nordihydroguaiaretic acid (NDGA) was the only antioxidant which substantially decreased the rate of fading due to dextrose; that the presence of trace impurities in such commonly used pharmaceutical items (as sorbitol) may cause color fading.

A possible mechanism of action is proposed and equations describing the kinetics of the reaction are presented.

WARREN E. MCCONNELL

PARABEN PRESERVATIVES AND TWEENS

Interaction of Preservatives with Macromolecules I. Binding of Parahydroxybenzoic Acid Esters by Polyoxyethylene 20 Sorbitan Monooleate (Tween 80), Patel, N. K., and Kostenbauder, H. B., J. Am. Pharm. Assoc. (Sci. Ed.) 47:289 (Apr.) 1958.

A quantitative study of the extent of binding of methyl and propyl parabens by Tween 80 was made. The experimental method made use of a nylon dialysis membrane through which the parabens would pass but which was impermeable to the Tween 80. Using various concentrations of Tween on one side of the membrane and of paraben on the other, the spectrophotometric determination of paraben on each side of the membrane after equilibrium was reached furnished the experimental data.

It was found that a relatively high degree of interaction occurred beween the Tween and parabens, and that the binding is a function of the concentration of unbound paraben and the concentration of Tween 80. Analysis of the data indicated that the binding is not a partitioning of the preservative into a micelle but, rather, is a result of complex formation. It was concluded that the mechanism of the binding observed in the dialysis studies is probably the same mechanism which is responsible for the solubilization of the preservative by Tween.

The data obtained in the study facilitate calculation of the quantity of methyl or propyl paraben which must be added to a system containing a known concentration of Tween 80 in order to have the desired concentration of unbound preservative.

WARREN E. MCCONNELL

PRESERVING TRAGACANTH JELLIES

Conditions for the Preservation of Gum Tragacanth Jellies, Taub, Abraham, Meer, W. A., Clausen, L. W., J. Am. Pharm. Assoc. (Sci. Ed.) 47:235 (April) 1958.

The object of the investigation was to determine under what conditions satisfactory preservation of tragacanth

jellies could be attained. Jellies containing 2% tragacanth and 5% propylene glycol and buffered at pH's of 3,4,5,6, and 7, were prepared using either benzoic acid (0.2%), chlorobutanol (0.5%), or methyl (0.2%) and propyl (0.05%) esters of para-hydroxybenzoic acid as preservatives. These jellies were sterilized then inoculated with standard cultures of 4 different organisms. After varying intervals of incubation, serial dilutions of the jellies were plated, the plates incubated, and direct colony counts taken as indication of the number of organisms present in the sample tested. These counts were compared with counts made on comparable dilutions of identical samples from which the tragacanth had been omitted.

Results showed that gum tragacanth jellies can be effectively preserved. Benzoic acid was found to be ineffective at pH 7 but was fairly effective at lower pH's. The combination of parabens was the most effective as a preservative. The effectiveness of all preservatives increased with aging of the jellies, especially at the lower pH's. The effect of pH on the preservation of jellies containing antibacterial agents is very important, the authors conclude.

WARREN E. MCCONNELL

VITAMINS AND HORMONES, WATER-SOLUBLE EPOXIDE POLYMERS OF

Surfactant Epoxide Polymers of Steroidal Compounds, Head, W. F., Dissertation Abstract 18:73 (Jan.) 1958.

To induce water solubility for purposes of minimizing formulation problems and with the hope of retaining physiological activity, ethylene oxide polymers of vitamin A, vitamin D, vitamin E, testosterone, estradiol, and cortisone were prepared. These polymers were soluble in both water and alcohol. Pharmacological testing was not undertaken at this time to determine their therapeutic value. The ethylene oxide and propylene oxide polymers of ursolic acid, its derivatives, and cholic acid were evaluated for the application as surface active agents. The method of polymerization was described.

NORMAN HO

OINTMENT BASES, PROPERTIES OF WATER-FREE GEL TYPE

A Study of Some Water-free Gel Type Ointments, Spiegel, A. J., Dissertation Abstract 18:205 (Jan.) 1958.

A gel type, water-free, soluble ointment base was studied. Such an ointment base has the advantage of plasticity over a wide temperature range, and avoids the incompatibilities of bases in which water is used. Some of the new gelling agents such as PVM/MA (copolymer of methylvinyl ether and maleic anhydride), polyacrylamine and viscarin were evaluated for possible use as ointment base ingredients. These bases were evaluated for consistency, manufacturing characteristics, stability, and compatibility of drugs commonly incorporated into ointment bases. The new gel type bases that were developed tested favorably with bases in current use, with which they were compared.

NORMAN HO

ANTIBIOTIC EMULSIONS, EFFECT OF RANCID OILS

The Effect of Rancidity on Antibiotic Containing Dermatological Emulsions, Kudalkar, V. G., Dissertation Abstracts 18:204 (Jan.) 1958.

The investigation was concerned with the rancidity of oils on the activity of dermatological preparations and the attempt to establish relationship between the extent of rancidity and activity of a preparation. Potassium penicillin G, bacitracin, and neomycin sulfate were studied in emulsion (w/o) bases using rancid peanut, corn, olive, coconut, castor, linseed and cod liver oils, and liquid petrolatum. The method of rendering the oils rancid at varying degrees was discussed. The activity of the preparation was measured by the agar-cup method using *Staphylococcus aureus* as the test organism for penicillin and neomycin sulfate, and *Micrococcus flavus* for testing bacitracin. Rancid corn, olive, cod liver, peanut and linseed oils were found to increase the activity of penicillin emulsions, while rancid liquid petrolatum decreased its activity. The activity of neomycin sulfate was decreased by all of the rancid oils of corn, olive, cod liver, peanut, and linseed and liquid petrolatum. However, in cases with liquid petrolatum, the activity of the neomycin emulsions was found to disappear completely at certain stages of rancidity and in lower concentrations of liquid petrolatum. The bacitracin activity was decreased by rancid corn, olive, and peanut oils, and liquid petrolatum, while rancid linseed oil did not seem to affect its activity.

Further investigations were carried out to determine the cause of inactivation of neomycin according to the following approaches: (a) neutralization of the free acids in the rancid oil, (b) the effect of pH on its activity, (c) the removal of rancid fatty acids by chromatography and (d) the addition of synthetic fatty acids to a non-rancid oil. The results indicated that the acids of rancidity were one of the factors involved in the inactivation of neomycin sulfate since pH was found not to be responsible for the inactivation, and the neutralization of the free fatty acids did not protect the antibiotic, and the addition of synthetic fatty acids reduced the antibiotic activity.

NORMAN HO

SULFADIAZINE SODIUM SOLUTIONS, DEGRADATION OF

Studies on the Degradation of Sulfadiazine Sodium Solutions, Swartz, C. J., Dissertation Abstracts 18:564 (Feb.) 1958.

Solutions of sulfadiazine sodium undergo color changes and precipitation on prolonged storage. The nature of the degradation is concluded to be one of oxidation. The degradation products do not interfere with the therapeutic efficacy of the sulfadiazine, but do make the product appear pharmaceutically objectionable. Degradation studies were carried on over a 100 day period at 60°C. The samples were stored in air filled, clear glass ampuls. Various antioxidants including ascorbic acid, p-amino-phenol, hydroquinone, nordihydroguaretic acid, sodium formaldehyde sulfoxylate, sodium sulfite and butylhydroxy anisole, were evaluated for their efficiency in preventing the discoloration.

NORMAN HO

TABLETS, EFFECT OF STARCH ON DISINTEGRATION TIME OF

Anomaly of Starch as a Tablet Disintegrator, Rotteglia, E. and Marinone, A., Boll. Chim. Farm. 96:83 (Feb.) 1957.

The authors determined the disintegration time for tablets compressed from 9 organic compounds chemically related to p-aminosalicylic acid (PAS) with varying proportions of starch. The U.S.P. XV method was used, and the tests were carried out at 17°C. and 37°C.

The most interesting results were obtained with the tablets prepared from the sodium salt of p-aminosalicylic acid (sodium PAS). It is generally known that the disintegrating action of starch is especially effective in tablets whose components are insoluble in water, and that tablets composed largely of water-soluble substances are disintegrated more slowly by starch. The results obtained with the tablets of PAS were as expected, namely that the disintegration time of the tablets progressively decreased as their starch content (up to 20%) was increased. On the other hand, when tablets of sodium PAS were tested, the opposite effect was observed. For example, the disintegration time of tablets of sodium PAS containing 5% starch was 2 minutes in contrast to 30 seconds for tablets containing no starch. Tablets containg 20% starch disintegrated in 30 minutes leaving a granular residue. These disintegration times were proportionately increased when the tests were carried out at 37°C. In fact, in the case of the tablets of sodium PAS containing 20% starch, there formed on the surface of the tablets a gelatinous layer which blocked the solubility of the salt in water.

Similar tests were also carried out with artificial gastric juices. No noteworthy variations were observed when the results were compared with those in which water was employed.

The authors also noted the effect of the lubricant magnesium stearate, 3%, on the disintegration time of tablets. From their results, they concluded that this lubricant definitely retarded the disintegration of all tablets that they tested, especially those which contained less quantities of starch.

JOHN BROOKS
ALBERT L. PICCHIONI

TALC, STERILIZATION OF

The Sterilization of Talcum Powder, Bateson, F.R.C., Box, J. A., and Gunn. C., Pharm. J. 180:334(May 3) 1958.

The work described in this paper was carried out to determine the time required for a mass of talc to acquire the same temperature as the oven in which it is being heated and also to determine the effectiveness of the sterilization process against spore-bearing organisms.

Results of the study indicate that there is no simple relationship between mass or talc or container diameter and rate of heating up. Although a temperature of 150° C. for 60 minutes seems to be adequate to sterilize talc, a 140° C. temperature exposure for 60 minutes appears to sterilize some samples but not others, depending on the degree of contamination.

The authors recommend that talc should be packed in small metal containers (preferably less than 2 cm. in diameter) for sterilization. The oven should be set to at least 155° C. and a period of 20 minutes should be allowed for the containers to reach sterilization temperature after the oven has reached its control temperature. This period of time should be increased if the oven heats to control temperature in less than 40 minutes.

CLIFTON J. LATIOLAIS

GLYCERIN, APPLICATIONS IN COSMETICS

Glycerin as a Constituent of Cosmetics and Toilet Preparations, Wells, F. V., J. Soc. Cosmetic Chem. 9:19 (Jan.) 1958.

The characteristic properties of glycerin are critically discussed and the manner in which their properties contribute to its employment in cosmetics are stated. Probably the most important property, as far as the cosmetic chemist is concerned, is its hygroscopicity, or power to absorb and retain moisture, besides the balanced combination of features, including the relative lack of toxicity, dermatological suitability, wide spectrum of compatibility, reasonable cost, good color, odor, and taste. The emollient action on the skin of glycerin-containing lotions and creams are largely due to humectancy. In emulsions, glycerin acts as an aid to emulsification, assists in the maintenance of viscosity and consistency at a desired level, and prevents the cream from drying out. Another important property is its versatile behavior as a solvent and vehicle. The plasticising action of glycerin is made use of in such products as cologne sticks, deodorant sticks, wave sets, and lacquers. More recently, glycerin has found important application as a stabilizer in aerosol formulations. In tooth pastes and mouth washes, glycerin is a sweetening agent, humectant, and "throat conditioner." From the dermatological point of view, glycerin is free from toxicity and harmful skin reactions.

NORMAN HO

NICOTINAMIDE ASSAY, USING CYANOGEN BROMIDE METHOD

Determination of Nicotinamide in B-Complex and Multivitamin Preparations Using the Cyanogen Bromide Method, Shah, R. C. and Gandhi, S. B., Indian J. Pharm. 20:105 (Apr.) 1958.

The use of the colorimetric cyanogen bromide assay method for the determination of nicotinamide in multivitamin and B-complex preparations presents two main problems *e.g.* the fading of color upon standing and the interference of other B-complex vitamins, chiefly vitamin B_1.

The authors have found that using silicotungstic acid overcomes both of these problems, and in addition, allows colorimetric assay of nicotinamide in deeply colored B-complex formulations containing iron and liver.

ROBERT W. MAHONEY

TOLU SYRUP, FUNGAL GROWTH IN

Fungal Growth in Syrup of Tolu, Wills, B. A., J. Pharm. Pharmacol. 10:302 (May) 1958.

Six species or strains within the genus *Penicillium* were studied for their adaptability to growth in tolu syrup. To determine the possibility of utilization of benzoic or cinnamic acid as a source of carbon, attempts were made to grow the fungi on media containing only aromatic acid as well as on media containing glucose or sucrose. Growth occurred in all media if the concentration of aromatic acid was insufficient. Growth was also tested in media with normal concentrations of sucrose and preservatives but with a pH varying from normal of 3.8. It was found that a more acid (pH 2.8-2.9) media inhibited all fungal growth. A less acid (pH 4.0-4.2) media supported growth if the inoculum was large.

JOHN D. LUCASSE

ULTRASONICS IN HOMOGENIZATION

Ultrasonics in Pharmacy, Goodman, J. E., Chemist and Druggist 169:395 (Apr. 12) 1958.

Ultrasonics may be utilized in the pharmacy as a rapid and efficient means of homogenization. Such machines have been developed which effect homogenization through the production of high frequency vibrations of a liquid impinging on a thin blade. This blade vibrates in a way similar to that of a reed in a musical wind instrument. These machines operate in a closed system which eliminates aeration of the liquid. They can handle all viscosities of liquids and ointments and the output is high.

JOHN D. LUCASSE

CHLORAMPHENICOL OINTMENT, EFFECTIVENESS OF

The Role of Ointment Bases in Local Antibiotic Treatment of the Eye, with Special Reference to Chloramphenicol, Richter, G. Klin., Mbl. Augenh. 131:215 (Feb.) 1957.

Twenty-five different ointment bases of the fatty, water-in-oil, oil-in-water, and hydrogel type containing 1% chloramphenicol in each one were tested for the surrender of the active substance *in vitro*, in the conjunctival sac, and its penetration into the eye (through cornea and blood-aqueous humor-barrier) of healthy rabbits.

The author points out how the action of chloramphenicol depends on the nature of the ointment base (non-irritability, consistency, stability, sterility), why the anhydrous water-in-oil emulsion type and chloramphenicol-oil are the most effective and suitable forms of a chloramphenicol application in external bacterial infections of the eye and why, during the treatment of intraocular bacterial infections, the oil-in-water, the water-soluble polywax and the tylosisslime ointment bases are superior to any other form of application (aqueous collyria, iontophoresis, powder, subconjunctival injection).

OTMAR M. NETZER

NOVOBIOCIN OINTMENT, STABILITY AND ANTIBACTERIAL ACTIVITY OF

An Evaluation of the Antibacterial Activity and Relative Stability of Novobiocin Sodium in Selected Ointment Bases, Stempel, Edward, Greenberg, Leo, and Urdang, Arnold, Am. J. Phar. 130:116 (Apr.) 1958.

The antibacterial activity and relative stability of novobiocin sodium in a number of selected ointment bases were investigated. Four types of bases were used: (1) greasy or oleaginous, (2) greasy absorption, (3) washable absorption, and (4) water-miscible.

Results indicate that novobiocin sodium showed the least antibacterial activity when incorporated in the greasy or oleaginous type ointment bases. The other three types of ointment bases are suitable for extemporaneous preparation of novobiocin sodium ointments. Of the water-miscible type, Hydrophilic Ointment U.S.P. XV is recommended. If a washable absorption base is desired, the Hickman-Burlage-Lloyd Base is efficient; or if a greasy absorption type base is desired, Plastibase Hydrophilic-water (4:1), Faiba-water (2:1) or Hydrosorb-water (2:1) are acceptable.

CLIFTON J. LATIOLAIS

DEIONIZED WATER

Purification of Water by Ion-exchange Resins, Graham Calder, Public Pharmacist (England) 15:96 (Apr.)1958.

The potentialities of using ion-exchange resins for the purification of water have stimulated general interest among hospital pharmacists. Both the *B. P.* and the *U.S.P.* now recognize deionization as an alternate method to distillation for the preparation of pharmaceutical water.

Ion-exchange resins are generally hard insoluble beads of a styrene-divinyl polymer and have a cationic and an anionic portion. The cationic portion contains many sulphonic acid groups and can be regenerated with

hydrochloric acid. The anionic exchanger contains quaternary ammonium hydroxide groups and is regenerated using sodium hydroxide solution. When the process of regeneration is necessary (as shown by a purity meter), the anion and cation portions can be separated by flotation, since the anion exchanger is less dense than the cationic part.

During operation, the cations in the feed water are replaced by hydrogen from the sulphonic acid groups and all the anions are replaced by hydroxyl groups from the quaternary ammonium hydroxide groups. Therefore, the water is practically free from ions other than hydrogen and hydroxyl.

Although deionization removes ions from the feed water, it does not remove dissolved gases as does distillation. Oxygen is not removed, resulting in the absorption of carbon dioxide if allowed to stand. This problem can be solved by boiling the water before use or bubbling nitrogen gas through the water.

Generally, the pH of the effluent is 6 to 8. Also, pyrogens were removed during deionization in some instances, but this was not the general rule. The ion-exchange system is very difficult to sterilize and investigators are working to develop a suitable method.

In conclusion, the use of ion-exchange resins produces water that may be used freely for all preparations other than injections if proper controls, such as the use of a purity meter, are maintained. The process is simple, inexpensive, and reliable.

ROBERT L. RAVIN

INJECTION DEPARTMENTS IN CZECHOSLOVAK PHARMACIES

Standardizing Injection Departments of Pharmacies, Filip A., Rektorik, Z., Ruzickova, D., and Synek, J., Ceskoslovenska Farmacie (Czechoslovakia) 7, 2:67, 1958.

This paper contains instructions elaborated at the suggestion of the Czechoslovak Ministry of Health according to which all Czechoslovak pharmacies supplying hospitals with parenteral preparations are to be organized in a standard way. All injection departments should have a minimum of six rooms: (1) washroom for mechanical and chemical cleaning of glass, rubber and metal materials; (2) washroom for rinsing the materials with water for injection; (3) room for sterilization; (4) room for preparing solutions which are to be sterilized; (5) aseptic box; and (6) room for control, adjustment, and storage of parenteral preparations.

The aseptic boxes should be provided with technical equipment which consists of the following parts: mixing rooms, air-filters, equipment for preliminary warming of the air, equipment for cooling the air, air-washing installation, device for suppression of water drops in the air, equipment for warming the air, and ventilator. The aseptic conditions are to be secured by aerosols of triethyleneglycol and ultraviolet radiation.

HUBERT ZACEK

HOW TO PREPARE MUCILAGE OF SALEP

A Rational Method of Obtaining Mucilage of Salep, Novikov, F. I. and Pustovoy, G. T., Aptechnoe Delo (U.S.S.R.) 7, 2:46 (Mar.-Apr.) 1958.

The following notes obtained in the study of methods of preparing mucilage of salep are communicated.

The viscosity, the density, and the remainder after evaporation of the mucilage of salep are greatly influenced by the fineness of the pulverized salep tubers, the temperature of water, the duration and the intensity of shaking while extracting the salep powder, and the duration of storage. The density and the remainder after evaporation are inversely proportional to the diameter of the particles of the salep powder. Mechanical shaking for 15 minutes by means of a vibrator is equivalent to a manual shaking that lasts 30 minutes. Filtering of the mucilage through gauze improves the appearance of the mucilage, while the physical constants are not changed. The mucilage of salep is to be stored under normal conditions (in a cool place) no longer than 2 days.

The preferred method of preparation is as follows: moisten one part of the salep powder by one part of concentrated alcohol in a dry bottle, then add 98 parts of boiling water and shake until cool. Filter the obtained mucilage through gauze.

HUBERT ZACEK

ERGOT, RECENT DEVELOPMENTS

Recent Research on Ergot, Gjerstad, G. Pharm. J. 180:379 (May 17) 1958.

The recent discovery of the psychogenic effects of certain of the ergot alkaloids has brought this plant parasite once more into the limelight. The 0.2% alkaloid content of ergot consists of a mixture of six types of alkaloids which can be divided into two groups: (1) The water-soluble ergometrine and (2) the water insoluble alkaloids ergotamine, ergocryptine, ergocornine, ergosine, and ergocristine. The last four were previously thought to be one substance, known as ergotoxine. The most important alkaloids are ergometrine and ergotamine, both complex amides of lysergic acid.

As a result of the dwindling supply of ergot, successful attempts have been made at the direct synthesis of the two important alkaloid molecules and also in utilizing the inactive alkaloids for the production of lysergic acid, which could then be converted to ergometrine. However, this synthesis is highly complex, involving 15 major steps, and it is questionable whether the synthesis is practicable. The scarcity of ergometrine has also led to a search for derivatives which would be easier to produce, more effective in use, and have fewer side effects. One of these was lysergic acid diethylamide, or LSD-25. An accidental laboratory intoxication indicated its hallucinogenic effects, and later it was found that as little as 0.0005 mg. invariably produced psychotic states resembling schizophrenia. The therapeutic value of the drug is at present disputed, since the psychosis produced is temporary. Nevertheless, it is likely that LSD-25 will lead to an understanding of the metabolic dysfunctions underlying psychotic states, particularly schizophrenia.

Another approach to solve the problem of supply has been the cultivation of ergot *in vitro* on purely synthetic or semi-synthetic substrates. While such production offers several distinct advantages, research workers have been only moderately successful in perfecting artificial cultures that would produce commercial amounts of the active alkaloids. To increase the supply of alkaloids and reduce the cost, ergot researchers should continue to investigate the biosynthesis of the 20 or so isolated alkaloids in an attempt to establish the precursors of the common skeletons, lysergic acid and lysergol.

LEWIS C. MINER

CURRENT LITERATURE

. . . also calling your attention to the following articles appearing in recent hospital and pharmaceutical journals

. . . . . .

GOVERNMENT

—Veterans Administration

Gooch, J. M.: Veterans Administration Drug Selection Policies and Procedures, *Military Med. 122*:323 (May) 1958.

LAWS AND REGULATIONS

Regan, W. S.: What the Law Says About Hospital Pharmacy, *Modern Hosp. 90*:102 (May) 1958.

LIBRARY AND REFERENCE

Miller, L. C.: The United States Pharmacopeia Revision Program, *Military Med. 122*:305 (May) 1958.

NARCOTICS

Archambault, G. F. and Dodds, A. W.: The Handling of Narcotics in Federal, State, County, and City Hospitals, *Military Med. 122*:313 (May) 1958.

PUBLIC HEALTH AND MEDICAL CARE

—Poison Control

Verhulst, H. L.: National Clearinghouse for Poison Control Centers, *Military Med. 122*:320 (May) 1958.

WARTIME ACTIVITIES AND CIVIL DEFENSE

Foster, T. A.: Hospital Pharmacy Disaster Planning, *Hosp. Progress 34*:136 (May) 1958.

DRUG EVALUATIONS

by the Council on Drugs of the American Medical Association

► THE FOLLOWING MONOGRAPHS and supplemental statements on drugs have been authorized by the Council on Drugs of the American Medical Association for publication and inclusion in *New and Nonofficial Drugs*. They are based upon the evaluation of available scientific data and reports of investigations. In order to make the material even more valuable, dosage forms and preparations of individual drugs have been added to the monographs. These dosage forms and preparations were not taken from material published in the *Journal of the American Medical Association* by the Council on Drugs; rather, they were obtained from such manufacturers' brochures, news releases, etc., which were available to us at the time of publication. An attempt has been made to make the list of dosage forms as complete as possible. However, no guarantee can be made that the list of preparations is complete and it is suggested that hospital pharmacists consult manufacturers' releases for additional dosage forms and preparations.

The issues of the *Journal of the American Medical Association* from which each monograph has been taken is noted under each monograph. Monographs in this issue of the JOURNAL include those published in the *Journal* to June 1, 1958.

Notice

New and Nonofficial Drugs 1958 is now available from your local bookstore and from the publishers, J. B. Lippincott Company, Philadelphia, Pa. This 1958 edition contains monographs of drugs evaluated by the Council on Drugs of the American Medical Association and published in the Journal of the A.M.A. to January 1, 1958. The index listed below contains those drugs evaluated and published between January 1, 1958 and June 1, 1958.

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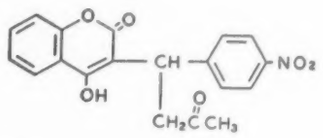
Acenocoumarol — Sintrom®

ACENOCOUMAROL is 3-(*a*-acetonyl-4-nitrobenzyl)-4-hydroxycoumarin. The structural formula of acenocoumarol may be represented as follows:



Actions and Uses

Acenocoumarol, a synthetic coumarin-type anticoagulant, depresses prothrombin activity as measured by both the one-stage and the two-stage methods. It is the most potent drug available in its class. With oral dosage, the peak of activity is reached within 24 to 48 hours, followed, upon discontinuation, by a rapid decline of activity and restoration of normal prothrombin levels within another 48 hours. Thus, acenocoumarol acts distinctly faster than bishydroxycoumarin but not quite as fast as ethyl biscoumacetate.

Acenocoumarol is used in the same manner and with the same precautions as other anticoagulants for the prophylaxis and treatment of intravascular clotting. In most cases, its rapid decline of activity permits treatment of overdosage by simple omission of the next scheduled dose. If actual hemorrhage does occur, this can be checked promptly by the administration of phytonadione (vitamin K_1). Although it contains a nitrobenzene group, acenocoumarol apparently does not cause depression of hematopoiesis. Gastrointestinal irritation is only rarely encountered. Acenocoumarol does not discolor the urine. (See the general statement on anticoagulants in New and Nonofficial Drugs.)

Dosage

Acenocoumarol is administered orally. The induction dose is 16 to 28 mg. on the first day of therapy followed by 8 to 16 mg. on the second day. Maintenance dosage is governed by individual response, as reflected by frequent prothrombin time determinations. The average maintenance dose ranges from 2 to 10 mg. per day.

Preparations: tablets 4 mg.

Applicable commercial name: Sintrom.

Geigy Pharmaceuticals, Division of Geigy Chemical Corporation, cooperated by furnishing scientific data to aid in the evaluation of acenocoumarol.

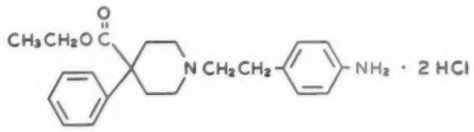
J. Am. Med. Assoc. 167:62 (May 3) 1958.

Preparations

Tablets Acenocoumarol (Sintrom) 4 mg.

Anileridine Hydrochloride — Leritine® Hydrochloride

ANILERIDINE HYDROCHLORIDE is ethyl 1-(4-amino-phenethyl)-4-phenylisonipecotate dihydrochloride. The structural formula of anileridine hydrochloride may be represented as follows:



Actions and Uses

Anileridine hydrochloride has the same actions and uses as anileridine phosphate except that it is administered by the oral route. The drug is rapidly absorbed from the gastrointestinal tract and provides analgesia for two to four hours. As with all narcotics, the analgesia produced after oral administration is not as consistent or as effective as with parenteral administration, but its high degree of potency is generally retained. (See the monograph on anileridine phosphate.)

Dosage

The usual oral dose of anileridine hydrochloride is 25 mg., repeated every six hours if necessary. A dosage of up to 50 mg., or more frequent doses, may be desirable for more severe pain.

Preparations: tablets 25 mg.

Applicable commercial name: Leritine Dihydrochloride.

Merck Sharp & Dohme, Division of Merck & Co., Inc., cooperated by furnishing scientific data to aid in the evaluation of anileridine hydrochloride.

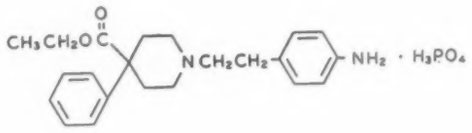
J. Am. Med. Assoc. 167:62 (May 3) 1958.

Preparations

Tablets Anileridine (Leritine) Hydrochloride 25 mg., scored.

Anileridine Phosphate — Leritine® Phosphate

ANILERIDINE PHOSPHATE is ethyl 1-(4-aminophenethyl)-phenylisonipecotate phosphate.—The structural formula of anileridine phosphate may be represented as follows:



Actions and Uses

Anileridine phosphate is a synthetic analgesic compound closely related in chemical structure and pharmacological action to meperidine hydrochloride. Its analgesic potency lies between that of meperidine and morphine; on the basis of its ability to relieve pain in man, anileridine appears to be about two and one-half times as potent as equal amounts of meperidine and approximately one-quarter as potent as the same weight of morphine. Like meperidine, anileridine exerts mild antihistaminic and spasmolytic effects, but it does not produce the constipating effect of the opiates. In the usual range of analgesic doses, sedative and direct hypnotic effects are minimal, being about the same as with meperidine but somewhat less than with morphine. Anileridine also exerts an antitussive effect, but this has not been evaluated clinically. It is similar to meperidine in that it

does not produce as much dizziness, nausea, and vomiting as morphine in patients confined to bed. The incidence of such effects is probably increased by ambulation as with all other narcotic analgesics, thus limiting its use in ambulatory patients. In equianalgesic doses the degree of respiratory depressant effects of anileridine is not significantly different from that of meperidine, but it is apparently of shorter duration. Circulatory depression is less than with meperidine. As with all narcotics, anileridine potentiates the action of the ultrashort-acting barbiturates and other central nervous system depressants. The drug is promptly absorbed after parenteral administration, and peak plasma levels are reached within one hour. Its duration of action is slightly less than that of meperidine; analgesic effects persist for about one-half to one hour after intravenous administration, one to two hours after intramuscular administration, and three to four hours after subcutaneous injection. Animal experiments indicate that the kidney and the liver are the principal sites of degradation and excretion.

Anileridine phosphate is useful for the relief of moderate to severe pain. It may be used as an analgesic adjunct in general anesthesia in the same manner as meperidine to reduce the amount of anesthetic needed, to facilitate relaxation, and to reduce laryngospasm. The drug is also useful post-operatively for the relief of wound pain. Anileridine has also been employed for obstetric analgesia, both alone or in combination with scopolamine or barbiturates. The results have been satisfactory, as a rule, for the mother, but some degree of fetal respiratory depression has been observed. There are also indications that the drug may slow labor. In general, anileridine appears to have the same usefulness and the same limitations as meperidine and is considered a satisfactory substitute for meperidine in all conditions in which that drug may be indicated. It will not relieve the most severe pain as effectively as morphine.

Respiratory depression and, to a somewhat lesser degree, circulatory depression are the chief hazards attending the use of anileridine. These effects are particularly prone to occur in elderly patients or in patients in whom the drug is administered too fast by the intravenous route. Special caution should be observed when the drug is used in conjunction with other narcotics, sedatives, or anesthetics, since these agents enhance respiratory depression. Should significant respiratory depression occur, this can be reversed by administration of nalorphine. Side-effects with anileridine are no more troublesome than with meperidine and include occasional nausea and vomiting, dizziness, perspiration, feeling of warmth, xerostomia, restlessness, nervousness, and excitement. Except in high concentration, parenteral injection causes little tissue irritation.

Anileridine has an addiction liability equivalent to that of morphine and is subject to the federal narcotic law. It suppresses morphine abstinence completely, whereas meperidine does not; in this sense, it has an addiction liability greater than that of meperidine. On the other hand, the dose of anileridine required to sustain addiction is about the same as that of meperidine, even though two and a half times as much meperidine as anileridine is needed to produce equal analgesic effects.

Dosage

Anileridine phosphate is administered by subcutaneous, intramuscular, or intravenous injection. Dosage varies according to severity of pain and response of the patient. For single subcutaneous or intramuscular injection in adults, the usual initial dose is 25 to 50 mg. This may be repeated at intervals of four to six hours as required. The usual dose for obstetric analgesia is 50 mg. repeated in three to four hours.

For intravenous use in support of anesthesia, the drug should be well diluted and administered slowly. For adults, 50 to 100 mg. is diluted with 500 cc. of 5% dextrose in water for injection. Enough of this diluted solution to provide 5 to 10 mg. is then infused slowly. Analgesia is maintained by slow intravenous drip at a rate adjusted to provide about 0.6 mg. per minute, depending on individual need and response. Direct intravenous injection of the concentrated commercial solution should not be attempted except under grave emergency situations when time or facilities do not permit dilution of the drug. If used under these conditions, the rate of injection should be extremely slow, so that the injection takes at least several minutes. It should be borne in mind that the sudden intravenous injection of an amount greater than 10 mg. may cause apnea.

Preparations: solution (injection) 25 mg. in 1 cc., 50 mg. in 2 cc., 750 mg. in 30 cc.

Applicable commercial name: Leritine Phosphate.

Merck Sharp & Dohme, Division of Merck & Co., Inc., cooperated by furnishing scientific data to aid in the evaluation of anileridine phosphate.

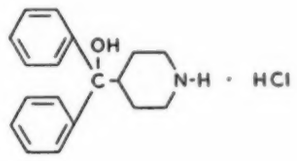
J. Am. Med. Assoc. 167:63 (May 3) 1958.

Preparations

Injection Anileridine (Leritine) Phosphate 25 mg. per ml.; 1 ml. and 2 ml. ampuls and 30 ml. vials.

Azacyclonol Hydrochloride Frenquel® Hydrochloride

AZACYCLONOL HYDROCHLORIDE is α,α-diphenyl-4-piperidinemethanol hydrochloride. α-(4-piperidyl)benzhydrol hydrochloride. The structural formula of azacyclonol hydrochloride may be represented as follows:



Actions and Uses

Azacyclonol hydrochloride, a diphenylmethane, is a structural isomer of pipradrol hydrochloride, differing only with respect to the point of attachment of the piperidine ring to the methanol carbon atom. This subtle change in chemical configuration is responsible for modifying its pharmacological action; pipradrol produces overt supramedullary stimulation, where azacyclonol appears to reduce certain types of cerebral stimuli. The drug cannot qualify as a typical central nervous system depressant in man, however, since it does not produce any appreciable sedative or hypnotic effects even in large doses. Meager evidence for a mild depressant effect in animals is noted by the ability of azacyclonol partially to antagonize the stimulant effects of its isomer pipradrol and to prolong the sleeping time, produced by use of hexobarbital, in mice. Neither action has been confirmed in man.

The principal experimental basis in man for the present claims that azacyclonol hydrochloride is an antihallucinatory agent stems from experiments reported to demonstrate an antagonistic effect against the confusion and auditory and visual hallucinations induced in human volunteers by mescaline and lysergic acid diethylamide (LSD 25). Subsequent studies attempting to confirm these observations have been unsuccessful.

The clinical trials stemming from these experiments were initiated because of a postulated relationship between drug-induced hallucinations and those associated with natural disorders, a hypothesis which remains to be proved. Results of clinical trials with azacyclonol in patients with hallucinations and confusion have been highly variable.

Some investigators report decidedly beneficial results in some, but not all, patients; other workers find the drug entirely without value. On the basis of the more favorable reports, it would appear that azacyclonol is most likely to be useful in acute schizophrenia and toxic states; it has been of less value in chronic schizophrenia and has no place in the treatment of psychotic depressive states, obsessive-compulsive disorders, or anxiety reactions. In general, most of the earlier favorable reports are based on studies over relatively brief periods of observation and are largely uncontrolled. More recent observations in chronic schizophrenia suggest that with longer duration of therapy (four to six weeks), in which oral doses of 100 mg. per day are used, a larger number of favorable responses may be obtained than with placebo controls in reducing the incidence of hallucinations, delusion, assaultiveness, agitation, and seclusiveness.

On the basis of both laboratory studies and clinical experience, the toxicity of azacyclonol hydrochloride seems to be negligible. Even in very large doses, both intravenous and oral, the drug has not produced any serious untoward reactions, or side-effects. Rarely, a maculopapular skin rash has been observed which is reversible upon discontinuation of therapy.

Dosage

Azacyclonol hydrochloride is administered orally or intravenously. There is no unanimity regarding the effective dosage. Hence, proposed oral dosage for the treatment of acute schizophrenic hallucinosis varies from as little as 20 mg. to as much as 100 mg. three times daily. For schizophrenic patients in whom oral medication is not feasible, 100 mg. of the drug is suggested by direct intravenous injection or slow intravenous drip. For the treatment of toxic psychoses, such as postoperative confusion or delirium tremens, the proposed intravenous dose is 100 mg. every eight hours for one to seven days. Until more evidence can be accumulated to support the therapeutic value of the drug, the foregoing proposed dosages should be considered experimental.

Preparations: tablets 20 mg. and 100 mg.; solution (injection) 20 mg. in 1 cc.

Applicable commercial name: Frenquel.

The Wm. S. Merrell Company cooperated by furnishing scientific data to aid in the evaluation of azacyclonol hydrochloride.

J. Am. Med. Assoc. **167**:466 (May 24) 1958

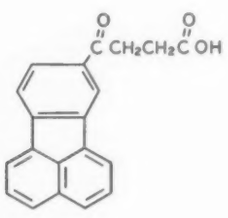
Preparations

Injection Azacyclonol (Frenquel) Hydrochloride 5 mg. per ml.; 20 ml. ampuls.

Tablets Azacyclonol (Frenquel) Hydrochloride 20 mg. and 100 mg.

Florantyrone — Zanchol®

FLORANTYRONE is γ-oxy-γ-(8-fluoranthene) butyric acid. The structural formula of florantyrone may be represented as follows:



Actions and Uses

Florantyrone is a synthetic substance which, although chemically unrelated to the natural bile salts, produces the pharmacological effects of dehydrocholic acid and related compounds. The drug causes an increase in the volume of bile without stimulating evacuation of the gallbladder or increasing the quantity of total bile solids. Hence, florantyrone is properly classified as a hydrocholeretic agent. The bile produced by administration of this agent is usually deep green in color, low in sediment, and of low viscosity.

Florantyrone has been proposed for use in the medical management of chronic cholecystitis and cholangitis and in the prevention of cholelithiasis. From a theoretical point of view, the production of a copious flow of thin bile may be of value to encourage drainage of the bile ducts by removal of mucus and inspissated bile and debris and to discourage the ascent of infection. However, available clinical studies do not demonstrate the effectiveness of florantyrone in cases in which the gallbladder does not fill and in the presence of stasis of the biliary ducts.

Florantyrone and other hydrocholeretics also have been employed for the treatment of so-called biliary dyskinesia. This condition is supposedly characterized, in part, by hypertonicity of the biliary musculature, resulting in spastic obstruction to the flow of bile. Since it is questionable whether such a clinical entity does, in fact, exist, it is difficult to interpret the significance of case reports of patients with biliary dyskinesia who are alleged to have responded favorably to florantyrone. In the absence of controlled observations, the benefits claimed in biliary dyskinesia may well have been psychological. Nevertheless, some clinicians advocate a trial of the drug in conjunction with antispasmodic agents in cases in which spasm of the sphincter of Oddi is suspected.

Florantyrone is reported to be useful for the treatment of postcholecystectomy syndrome. Although this is a difficult diagnosis to make or refute, the majority of patients treated for this condition showed some degree of symptomatic improvement. Since slow improvement is to be expected after such an operation without treatment by florantyrone, there is no convincing evidence that the improvement cited was due to the drug. However, there may be some validity to the concept that postoperative therapy to increase the flow of bile may compensate to some extent for the missing bile reservoir removed at surgery. There is no doubt that a copious flow of thin bile is helpful in removing small stones or other foreign material overlooked at operation. In patients with T-tube drainage after choledochoplasty, the drug is of considerable value in maintaining the patency of the tube, by preventing or diminishing the amount of incrustation and inspissated material which may form.

There is no valid evidence that florantyrone is useful in the treatment of hepatic dysfunction. The wisdom of employing this or any other hydrocholeretic in the presence of severe hepatitis is questionable. The toxicity of florantyrone is low and its margin of safety wide. As with other hydrocholeretics, the drug may produce some diarrhea. It may also aggravate pruritus in patients with some forms of partial intrahepatic or extrahepatic biliary obstruction.

There is no report of liver toxicity in patients with normal hepatic function. Since the drug is likely to be used in patients with chronic hepatic or biliary tract disease and for long periods of time, further investigation for possible harmful effects in such patients and under such conditions is indicated. Because it increases the flow of bile, florantyrone is contraindicated in patients with complete mechanical biliary obstruction. It should not be used in the presence of acute cholecystitis.

Dosage

Florantyrone is administered orally. The usual dose for adults ranges from 750 mg. to 1 Gm. daily.

Preparations: tablets 250 mg.

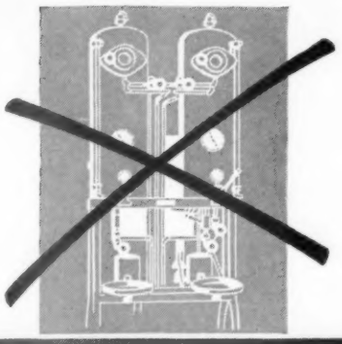
Applicable commercial name: Zanchol.

G. D. Searle & Co. cooperated by furnishing scientific data to aid in the evaluation of florantyrone.

J. Am. Med. Assoc. **167**:467 (May 24) 1958.

Preparations

Tablets Florantyrone (Zanchol) 0.25 Gm.



Pour-o-vac

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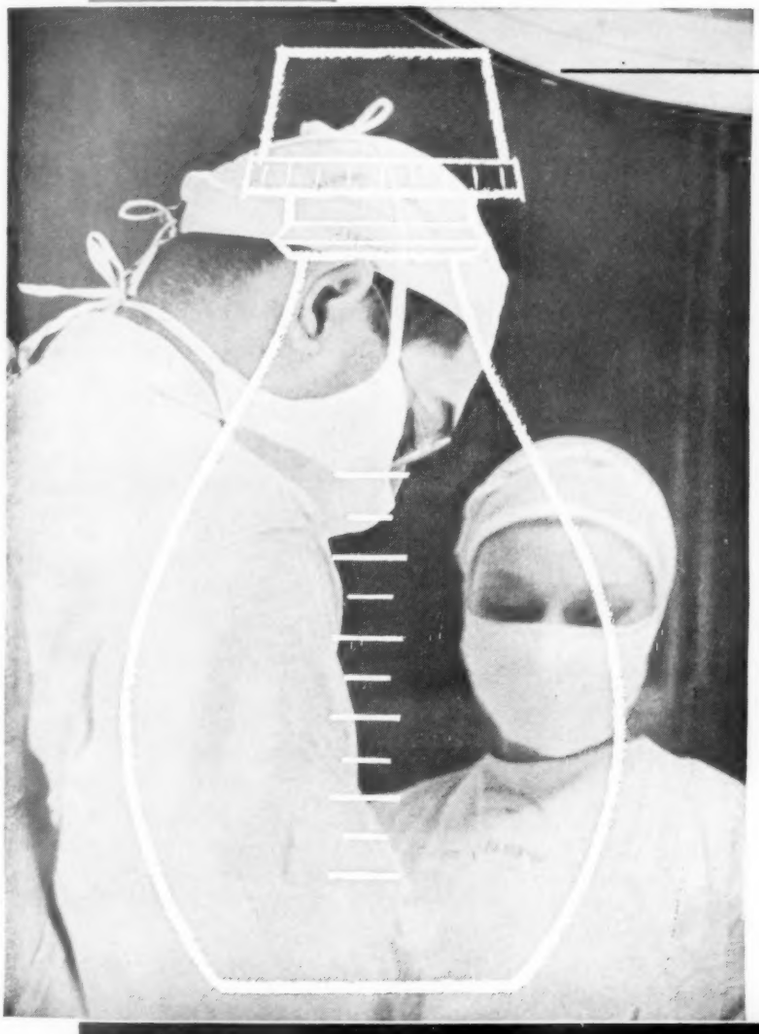

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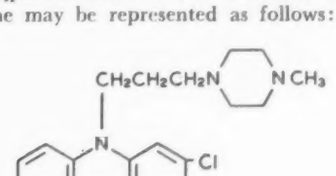
Prochlorperazine — Compazine®

PROCHLORPERAZINE is 2-chloro-10-[3-(1-methyl-4-piperazinyl)propyl]phenothiazine. The structural formula of prochlorperazine may be represented as follows:



Actions and Uses

Prochlorperazine has the same actions and uses as prochlorperazine maleate except that it is administered rectally. (See the monograph on prochlorperazine maleate.)

Dosage

For rectal administration, the suggested dose for adults is one 25-mg. suppository twice daily. Rectal dosages for children are as follows: up to 2 years of age, one-half to one 5-mg. suppository twice daily; ages 2 to 6, one 5-mg. suppository twice daily; ages 6 to 12, one to two 5-mg. suppositories twice daily.

Preparations: suppositories 5 mg. and 25 mg.
Applicable commercial name: Compazine.
Smith, Kline & French Laboratories cooperated by furnishing scientific data to aid in the evaluation of prochlorperazine.

J. Am. Med. Assoc. 167:468 (May 24) 1958.

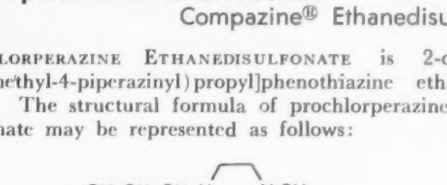
Preparations

Solution, Concentrated, Prochlorperazine (Compazine) 10 mg. per ml.

Suppositories Prochlorperazine (Compazine) 5 mg. and 25 mg.

Prochlorperazine Ethanedisulfonate — Compazine® Ethanedisulfonate

PROCHLORPERAZINE ETHANEDISULFONATE is 2-chloro-10 [3-(1-methyl-4-piperazinyl)propyl]phenothiazine ethanedisulfonate. The structural formula of prochlorperazine ethanedisulfonate may be represented as follows:



Actions and Uses

Prochlorperazine ethanedisulfonate has the same actions and uses as prochlorperazine maleate except that it may be administered intramuscularly as well as orally. Parenteral therapy is usually reserved for the treatment of severe nausea and vomiting, for the immediate control of acutely disturbed psychotics, or for patients who cannot be relied upon to take oral medication. (See the monograph on prochlorperazine maleate.)

Dosage

Prochlorperazine ethanedisulfonate is administered orally or by deep intragluteal injection. Oral dosage for adults and children is the same as that outlined in the monograph on prochlorperazine maleate. For severe nausea and vomiting, the usual intramuscular dose for adults is 5 to 10 mg. every three to four hours. No more than 40 mg. should be injected in any 24-hour period unless the patient is hospitalized and under adequate observation. For control of acutely disturbed patients, the suggested intramuscular dose is 10 to 20 mg. repeated at intervals ranging from one to six hours, depending on individual clinical response. For all indications, the usual intramuscular dose for children is 0.10 mg. per pound of body weight. Oral therapy should be substituted as soon as feasible.

Preparations: solution (injection) 10 mg. in 2 cc., 50 mg. in 10 cc.; syrup 1 mg. per cc.
Applicable commercial name: Compazine Ethanedisulfonate.
Smith, Kline & French Laboratories cooperated by furnishing scientific data to aid in the evaluation of prochlorperazine ethanedisulfonate.

J. Am. Med. Assoc. 167:468 (May 24) 1958.

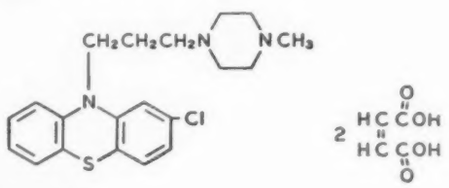
Preparations

Injection Prochlorperazine (Compazine) Ethanedisulfonate 5 mg. per ml.; 2 ml. ampuls and 10 ml. vials.

Syrup Prochlorperazine (Compazine) Ethanedisulfonate 5 mg. per 5 ml.

Prochlorperazine Maleate — Compazine® Maleate

PROCHLORPERAZINE MALEATE is 2-chloro-10-[3-(1-methyl-4-piperazinyl)propyl]phenothiazine dimaleate. The structural formula of prochlorperazine maleate may be represented as follows:



Actions and Uses

Prochlorperazine maleate is a phenothiazine compound with actions and uses similar to those of chlorpromazine to which it is related chemically. On a weight basis, prochlorperazine is considerably more potent than chlorpromazine, and comparable therapeutic effects may be achieved with doses which are approximately one-fifth those of the latter agent. The drug produces less adrenergic blockade and consequently less hypotension than does chlorpromazine. It also exerts mild antihistaminic and antispasmodic effects. Unlike chlorpromazine, its potentiating action on other central nervous system depressants is minimal and may be clinically insignificant. The precise mechanism of action, metabolic fate, and excretion of prochlorperazine are not known.

Prochlorperazine maleate is employed for the treatment of those neuroses and mild emotional disturbances in which anxiety, tension, and agitation predominate. The drug is apparently capable of alleviating this type of mental stress and of lessening motor activity in a sizable percentage of patients. Prochlorperazine maleate has also been employed in severe psychiatric disorders such as schizophrenia, mania, involutional psychoses, degenerative conditions, and senile and toxic psychoses. On the basis of subjective observations, the drug appears to be useful in many such cases. Beneficial results ascribed to its action include, among others, reduction in psychomotor agitation and excitement, diminished aggressiveness and destructiveness, loss of hallucinations and delusions, and a general calming effect. The drug has been also used successfully in some cases of psychomotor retardation marked by apathy and lethargy. Prochlorperazine maleate is effectively employed as an antiemetic, and for this purpose it exhibits a potency of about four to five times that of chlorpromazine. Accordingly, it may be used for the control of mild or severe nausea and vomiting due to a variety of causes.

In general, the over-all clinical toxicity of prochlorperazine appears to be somewhat less than that of chlorpromazine. In the usual therapeutic dosage range, side-effects are generally infrequent, mild, and transitory. These include sedation, dizziness, hypotension, tachycardia, and xerostomia. Rarely, a skin reaction, tinnitus, vertigo, nasal congestion,

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Also elixir, 20 mg. (⅓ grain) per 5 cc. teaspoon.

Winthrop LABORATORIES NEW YORK 18, N. Y.

Luminal (brand of phenobarbital), trademark reg. U.S. Pat. Off.

miosis, or gastric hyperacidity may occur. Prochlorperazine also compares favorably with chlorpromazine with respect to the infrequent occurrence of orthostatic hypotension, sedation, and lethargy. To date, no jaundice or blood dyscrasias have been reported; however, in view of the phenothiazine structure of the drug, physicians should be alert to this possibility. On the other hand, neurological sequelae referable to extrapyramidal involvement may be troublesome at higher dosages and not infrequently complicate therapy with prochlorperazine. Symptoms are Parkinsonian-like in character and include spasticity and painful constriction of skeletal muscles, chiefly those of the head, neck, and shoulders. Such effects are most frequent when high doses are used but have occurred with even moderate dosage. Hence, adequate observation of the patient is necessary. If extrapyramidal symptoms appear, they may be controlled by either a downward adjustment of dosage, by the concomitant administration of an antiparkinson drug, or by temporary withdrawal of prochlorperazine.

Dosage

Prochlorperazine maleate is administered orally. In mild and moderate emotional disturbances and in nausea and vomiting, the oral dose for adults ranges from 5 to 10 mg. three or four times daily. In more resistant cases, the dosage may be increased gradually until symptoms are controlled or side-effects become bothersome. The suggested initial oral dose for the treatment of institutionalized psychotic patients is 30 to 40 mg. per day in divided doses. This is then increased gradually until the desired response has been obtained. The usual effective dose for such patients is 75 to 125 mg. daily.

For infants and children up to 2 years of age, the usual oral dose is 0.25 mg. per pound of body weight one or two times daily but not exceeding a total of 15 mg. per day. Doses of 5 mg. two or three times daily but not exceeding 20 mg. per day may be given to children between the ages of 2 and 6. For children between 6 and 12 years of age, the usual oral dose is 5 mg. two or three times daily, but it should not exceed a total of 25 mg. per day.

Preparations: capsules (sustained-release) 10, 15, and 30 mg.; tablets 5, 10, and 25 mg.
Applicable commercial name: Compazine Dimaleate.
Smith, Kline & French Laboratories cooperated by furnishing scientific data to aid in the evaluation of prochlorperazine maleate.

J. Am. Med. Assoc. **167**:468 (May 24) 1958.

Preparations

Capsules Prochlorperazine (Compazine) Maleate, Sustained-action, 10 mg., 15 mg., and 30 mg. (Spansules).
Tablets Prochlorperazine (Compazine) Maleate 5 mg., 10 mg., and 25 mg.

Protamine Sulfate N.F.

PROTAMINE SULFATE, N. F. is the sulfate of a strongly basic substance which is protein-like in nature and which is derived from the sperm of the salmon and other species of fish. Protamine is essentially a large polypeptide which, on hydrolysis, yields arginine or arginine in combination with histidine, lysine, or both.

Actions and Uses

Protamine sulfate is a heparin antagonist. Paradoxically, the drug itself is an anticoagulant and will cause a prolongation of the clotting time. Although not nearly as active as heparin, protamine may be considered a true antithromboplastin. However, when protamine is given in the presence of heparin, the attraction of the two substances for each other is much greater than their individual attraction to the blood elements. Thus, in a sense, each neutralizes the anticoagulant activity of the other. The quantitative relationship of this interaction, which proceeds both in vitro and in vivo, is that of approximate direct ratios; i.e., about 1 mg. of protamine is required to overcome the anticoagulant effect of 1 mg. of heparin. When given intravenously to a heparinized patient, protamine appears to act almost instantaneously, and its effects persist for about two hours.

Protamine sulfate is well established as an effective agent for combating the bleeding tendency that results from overdosage of heparin. Its intravenous administration results in rapid control of heparin-induced hemorrhage and, if given in sufficient dosage, a restoration of clotting time to normal. The availability of protamine sulfate is therefore essential for the safe management of patients undergoing anticoagulant therapy with heparin.

Protamine has also been used for the treatment of certain nonspecific hemorrhagic states which are believed to be characterized, in part, by increased amounts of heparin or heparin-like substances in the circulation. The rationale for such therapy is based upon the observation that the blood of certain patients, notably those with menorrhagia, postpartum hemorrhage, or postirradiation hemorrhagic diathesis, shows an increased protamine titration. This test is one in which identical aliquots of heparinized blood are added to increasing concentrations of protamine, the endpoint being the amount of protamine required for clot formation. Some patients in this diagnostic category have shown decided improvement after the administration of protamine, but there is insufficient evidence at present to prove conclusively that the cessation of hemorrhage in these conditions can be attributed to the action of the drug. Thus, the use of protamine in the treatment of acquired hemorrhagic diseases is considered experimental.

In clinical use, protamine sulfate appears to be well tolerated, and large intravenous doses (up to 200 mg. in two hours) have been administered without any untoward effects. Since it is the additive used in the preparation of protamine zinc insulin, protamine has often been suggested as the causative agent in the hypersensitivity reactions that sometimes occur in diabetic patients receiving that form of insulin. However, experiments have demonstrated that such reactions are due to sensitivity to the insulin rather than to the protamine, and it appears doubtful that allergy to protamine exists to any significant degree.

Dosage

Protamine sulfate is administered intravenously and, occasionally, intramuscularly. For the treatment of heparin overdosage, a 1% solution is injected slowly (in one to three minutes) by the intravenous route. Since heparin is counteracted approximately milligram for milligram, the total dosage of protamine can be determined from the amount of heparin given over the previous three to four hours. The dosage should not exceed 50 mg. of protamine at any one time.

In the treatment of spontaneous hemorrhagic disorders, the proposed total daily dosage is 5 to 8 mg. per kilogram of body weight, injected in two equal portions six hours apart; the calculated dose is diluted in 300 to 500 cc. of isotonic sodium chloride solution and slowly infused intravenously. Therapy should not be continued for longer than three days.

Protamine sulfate has been administered intramuscularly for the treatment of uncomplicated bleeding states in which elevated protamine titration levels exist. The proposed dosage is 50 mg. every four hours for postpartum hemorrhage; for menorrhagia, the proposed intramuscular dose is 50 to 100 mg. on the second day of the menstrual period. The proposed dosage, as well as its use for these purposes, is considered experimental.

Preparations: solution (injection) 10 mg. in 1 cc.
Applicable commercial name: Protamine Sulfate.
Eli Lilly and Company cooperated by furnishing scientific data to aid in the evaluation of protamine sulfate.

J. Am. Med. Assoc. **167**:64 (May 3) 1958.

Preparations

Injection Protamine Sulfate 10 mg. per ml.; 5 ml. ampuls.

Our Great Responsibility With Drugs

Through the ages doctors have always born a great responsibility to their patients in seeing that the right drug was given, the right dosage prescribed. The crude herbs could do harm, even cause death, if not properly handled. Today our problem is magnified many times over. The agents we use are stronger and capable of doing greater harm if not properly regulated. The profound action of modern drugs is a sobering thought. Medications capable of altering our mood, personality, thought—killing our germs, anticoagulating our blood, loosening up crippled joints—all are indeed potent. The increase in discharges from mental and tuberculosis hospitals is a good testimony to the effectiveness of some of these agents. The fact that our population is consuming many of these drugs by the ton is a very staggering consideration. The burden of responsibility we carry in writing so many prescriptions is even more staggering. What influences these drugs will have on future health and future generations is still unknown.

As wonderful as our pharmaceutical manufacturers are, and great credit must be given to them for their research, they cannot be the watchdog of the people. They are big business and are interested always in showing a profit. What is good for the patient may be lost in this scramble. No one can deny that we are pressured in subtle ways to use this and that, no good of humanity but to raise sales quotas. The pure food and drug laws are a great safeguard up to a point. However, only the individual doctor who writes the prescription can be the final judge whether to use the products or not. We must constantly keep abreast with research, know what is going on experimentally, and refuse to use new agents until a well-documented study by capable investigators is presented.

—Westchester, N.Y. Medical Bulletin, May 1957

MEETING DATES 1958

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July

Philadelphia College of Pharmacy and Science Summer Courses
July 7-August 1, Philadelphia, Pa.

Preparation of Parenteral Products
July 7-18, Fifth Annual Radiochemical Institute

Principles of Radioactivity and Measurement
July 7-18

Biological and Medical Application
July 21-25

Radiochemical Instrumentation
July 28-August 1

Institute on Hospital Pharmacy (A.H.A.)
Chicago—July 28-August 1. University of Chicago

August

American Hospital Association —
Annual Convention—August 18-21, Chicago, Ill. International Amphitheatre; Palmer House

35th Plant Science Seminar
Aug. 18-22, Big Rapids, Mich. Ferris Institute

September

International Pharmaceutical Federation
September 8-13, Brussels, Belgium

October

Catholic Hospital Association, Continuing Education Program for Hospital Pharmacists

Pharmacology of Autonomic Drugs
October 13 - 17, St. Louis, Mo.

Sixth Annual Symposium on Antibiotics
October 15-17, Washington, D.C. Willard Hotel

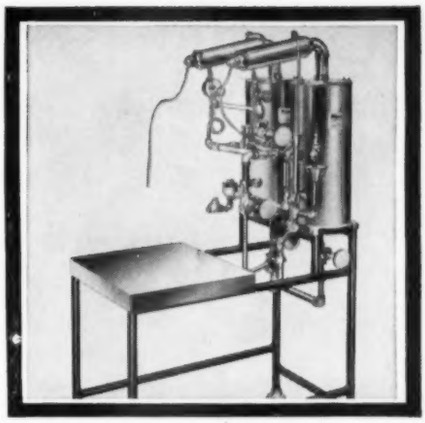
December

American Association for the Advancement of Science
December 26-31, Washington, D.C.

April 1959

American Pharmaceutical Association
Annual Convention, Cincinnati, Ohio

American Society of Hospital Pharmacists
Annual Convention, Cincinnati, Ohio



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JOHNSON CITY 3113
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CHATTANOOGA 6-5863

POSITIONS

in hospital pharmacy

PERSONNEL PLACEMENT SERVICE

The Personnel Placement Service is operated without charge for the benefit of hospitals and pharmacist members of the American Pharmaceutical Association and the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS. The ultimate purpose is the improvement of pharmaceutical services in hospitals, by more adequately fulfilling hospital pharmacy personnel needs and by locating positions which provide challenging opportunities for pharmacists who have indicated an interest in a hospital career.

By participating in the service, the hospital indicates a desire to achieve a pharmaceutical service which meets the *Minimum Standard for Pharmacies in Hospitals.* A description of the position should be submitted to the Division of Hospital Pharmacy on the forms provided. The hospital will receive applications directly from the applicant. The hospital agrees to reply to each application received and to notify the Division of Hospital Pharmacy when the position is filled.

The pharmacist, by participating, agrees to submit a Personnel Placement Service Information Form to the Division of Hospital Pharmacy. The applicant will then be notified of openings listed with the Service as they become available and can negotiate directly with the hospital if he is interested. It is agreed that the Division of Hospital Pharmacy will be notified as soon as a position is accepted.

A listing of positions open and wanted will be made regularly in the AMERICAN JOURNAL OF HOSPITAL PHARMACY without charge. Neither the name of the hospital offering the position nor the name of the applicant will be listed, except by code. All inquiries should be directed as shown below, including the code number.

Address all inquiries to

Division of Hospital Pharmacy
2215 Constitution Avenue, N. W.
Washington, 7, D. C.

positions wanted

PHARMACIST—female; experience in both hospital pharmacy and retail pharmacy. Prefers Southwest or Mid-Atlantic area. PW-11.

CHIEF PHARMACIST—prefers general hospital in Fla.; registered in Ohio and Fla.; experience in hospital and retail pharmacy. PW-12.

CHIEF PHARMACIST—(or Asst. Chief Pharmacist in large hospital); prefers vicinity of St. Louis; now employed as staff pharmacist. Registered in Mo. PW-13.

CHIEF PHARMACIST—Prefers Minn. or Calif., registration in both states; 10 years' experience government service, including commissions in U.S. Public Health Service and Navy; experience with VA as chief pharmacist; Ph. D. in Pharmacy. PW-15.

PHARMACIST—N. J. registration; prefers Pa., Fla., D.C., or Va.; experience in managing retail pharmacy. PW-18.

CHIEF PHARMACIST OR CHIEF PHARMACIST PURCHASING AGENT—prefers nonsectarian and nongovermental institution of up to 200-bed capacity or larger. Now employed. Experienced retail and hospital pharmacy. PW-19.

CHIEF PHARMACIST IN A TEACHING HOSPITAL—registered Ind., Mich., and Mo.; prefers general hospital in Midwest; experience in teaching and in hospital pharmacy. PW-26.

PHARMACIST—registered in Ohio since 1934; experience in retail pharmacy only (23 years). PW-27.

PHARMACIST—prefers vicinity of Chicago; registered in Ill., now employed there. Graduate of Univ. of Ill. College of Pharm. PW-31.

CHIEF PHARMACIST OR ASSISTANT PHARMACIST—Prefers medium size hospital; registered in Ind., Mich., and Wis. 8 years' experience chief pharmacist and purchasing agent. Prefers Midwest or East. PW-32.

STAFF PHARMACIST—B.S. Mass. College of Pharmacy; age 27; registered in Mass. and N.H. 8 years retail experience. PW-35.

CHIEF PHARMACIST OR ASSISTANT CHIEF PHARMACIST—B.S. Pharm., M.S. in Hospital Pharm. Male; prefers East or Midwest. PW-36.

PHARMACIST (LARGE TEACHING HOSPITAL) OR ADMINISTRATOR—Registered in Ohio; experience in retail pharmacy, hospital administration and X-ray. PW-37.

CHIEF PHARMACIST—Male, married; B.S., working on M.S.; 4 years' experience hospital pharmacy. Registered in Pa.; will locate anywhere. PW-42.

PHARMACIST—Male, married; B.S. four years retail experience Army Dispensary. Registered New York desires to locate in East. PW-44.

PHARMACIST—Graduate of Medical College of Va.; age 26; two years Marine Corps. Managerial experience. PW-45.

HOSPITAL PHARMACY INTERN—Graduate of Univ. of Wash. has completed military service. Prefers northwest. PW-46.

STAFF PHARMACIST—Graduate Howard Univ. College of Pharmacy; limited experience; anxious to learn. Any location. PW-50.

STAFF PHARMACIST—Graduate George Washington College of Pharmacy extensive retail pharmacy experience. Prefers D.C. or Fla. PW-52.

CHIEF PHARMACIST—prefers middle West; registered in Ill.; female, single; graduate of Univ. of Ill. College of Pharmacy; now employed as Chief Pharmacist. PW-61.

CHIEF PHARMACIST—M.S. degree in hospital pharmacy; prefers East; male, single; extensive experience including pharmacy and administrative officer in Air Force. PW-62.

STAFF PHARMACIST—Completed military requirements; experienced in hospital pharmacy; prefers mid-Atlantic area, single. PW-63.

CHIEF PHARMACIST—registered in Tenn., La., Tex.; prefers South; graduate Univ. of Tenn., School of Pharmacy. PW-64.

PHARMACIST—Desires position Baltimore area; prefers small hospital; experience includes 21 years as owner-manager of retail store. PW-65.

INDIAN PHARMACIST—desires appointment to obtain higher training in hospital pharmacy; graduate Madras University; 1½ years' experience in 1,000 bed hospital, including inpatient and outpatient dispensing, parenteral and general manufacturing and administration. Available September, 1958. PW-68.

CHIEF PHARMACIST—M.S. degree in hospital pharmacy; served residency at VA Center in Los Angeles; 3 years' experience as chief pharmacist in VA since that time. Registered in Ky. and Fla.; prefers Midwest. P.W.-69.

CHIEF PHARMACIST—male, married; B.S., Ph. G. now employed chief pharmacist. Prefers South or Southeast. Registered Ala. and Va. Desires administrative work along with pharmaceutical. PW-70.

CHIEF PHARMACIST—male, married. B.S. 3 years' hospital experience; Registered N.Y. and Vt. desires to locate in New York or adjoining state. PW-71.

STAFF PHARMACIST—female married; internship at Freedman's Hospital; experienced in hospital pharmacy. B.S. prefers D.C. area. Registered in Ind., D.C. and N. Car. PW-72.

CHIEF PHARMACIST—female, single; hospital experience. Desires position 100 bed hospital. B.S. Registered Ky. Prefers Ky. PW-73.

HAITIAN STAFF PHARMACIST—male, married. Has five years' hospital experience. Present owner of pharmacy. Desires to locate in northeast U.S. PW-74.

ASSISTANT CHIEF PHARMACIST—male, married. Registered in Calif. and Wash. Background of drug company representative, retail pharmacy and now employed in Clinic and Research Foundation as Chief Pharmacist. Prefers Pacific states or Ariz. location. PW-76.

CHIEF PHARMACIST—male, single. B.S. and M.S. in Hospital Pharmacy. Serving hospital pharmacy internship. Prefers Midwest or East. PW-77.

CHIEF PHARMACIST—male, married, registered N. Y. and Pa. Extensive hospital pharmacy experience. Now employed as assistant director of pharmacy. Prefers eastern part of country. PW-78.

ASSISTANT PHARMACIST—male, married. Registered Minn. 10 years' hospital experience. Desires midwest location. PW-79.

ASST. CHIEF PHARMACIST—male, single. Registered N.Y., Vt. Hospital pharmacy internship; Prefers East. PW-80.

CHIEF PHARMACIST—male, married, registered Mass., Conn. and Calif. Six years retail and five years' hospital experience. M.S. hospital pharmacy. Desires northeast location. PW-81.

PHARMACIST—(relief) male, single. Registered N.J. Hospital background and internship. Locate N.J. PW-83.

PHARMACIST—Self-employed retail pharmacy for 20 years Ph.G. degree; registered N.Y. 3 years' hospital experience. Prefer locate N.Y. PW-84.

ASSISTANT CHIEF PHARMACIST—Male, married. Registered Ia. Three years USAF hospital experience. Served hospital pharmacy internship. Candidate M.S. August '58. Prefers Iowa and West. PW-85.

CHIEF PHARMACIST—16 years hospital pharmacy, presently employed Chief Pharmacist. Female, single. Registered Mich. and Ill. Prefers locate Midwest. PW-85-A.

CHIEF PHARMACIST—male, single. M.S. hospital pharmacy. Now employed as instructor. Registered Tenn. Hospital pharmacy experience. PW-86.

STAFF PHARMACIST—4 years' hospital pharmacy experience; prefers Wash. state (registered). Female, married. B.S. pharmacy. PW-87.

IRANIAN PHARMACIST—desires opportunity to continue hospital pharmacy studies; single, age 30; excellent academic background; now studying industrial chemistry. Prefers location in the West or Northeast. PW-88.

ASSISTANT CHIEF PHARMACIST—female, single; B.S. 1 year hospital pharmacy internship; registered Okla. Prefers West or Southwest. PW-89.

ASST. PHARMACIST—female, married. Educated and trained in Philippines. Served hospital internship. Registered Manila. Desires to locate East Coast of U.S.—PW-91.

CHIEF PHARMACIST—prefers large hospital. Male, married; registered N.H., Mass., Calif. 10 years' VA hospital experience. PW-92.

CHIEF PHARMACIST—prefers small hospital in Ohio. Male, married; BS; registered Ohio. Excellent academic and professional background. PW-93.

PHARMACIST—male, single. Finishes internship Freedmen's hospital June, 1958. Taking Board exams. July. PW-94.

STAFF PHARMACIST OR ASSISTANT CHIEF—female, single. Filipino, educated and trained Philippines. 10 years' hospital experience. Served hospital pharmacy internship. PW-95.

STAFF PARMACIST—male, single; registered Del. Finishes hospital pharmacy internship July 1958. Desires Mid-Atlantic area. PW-96.

positions open

STAFF PHARMACIST—registered in Ill.; for manufacturing or dispensing in large teaching hospital; excellent equipment; good hours; two weeks' vacation; sick leave; minimum starting salary $470.00 per month; higher salary for those experienced in manufacturing. PO-1

ASSISTANT CHIEF PHARMACIST—eligible for licensure in N.J.; 350 bed hospital; 44 hour week, 2 weeks' vacation; salary $5200 to $5700. PO-6

PHARMACIST—80 bed hospital; full responsibility for pharmacy and central sterile supply services; minimum of one year experience in hospital pharmacy; salary open. PO-17

ASSISTANT CHIEF PHARMACIST—209 bed general hospital, expanding to 300 beds; 40-hour week; 3 weeks' vacation; $5,000.00 annually; N.J. registration required. PO-18

PHARMACIST—162 bed hospital located in Ohio; assume complete charge of the department; prefer woman with hospital internship; salary open. PO-21

ASSISTANT CHIEF PHARMACIST—185 bed hospital; prefer member of Seventh Day Adventist Church. PO-22

STAFF PHARMACIST—eligible for licensure in Conn. 279 bed hospital; new, modern general hospital located on Long Island Sound, 28 miles from N.Y. City; excellent working conditions and personnel policies. PO-23

CHIEF PHARMACIST—Ky. registration required; salary, $6,420; 40-hour week; 4 weeks' vacation; noncontributory retirement plan; guaranteed annual salary increases. PO-26

STAFF PHARMACIST—female preferred; 274 bed general hospital and 172 bed maternity hospital; Calif. registration required; salary $525.00 per month; benefit program represents 17 percent of base salary. PO-27

CHIEF PHARMACIST—private hospital in S. Car.; to be in complete charge of pharmacy, including purchase and control of drugs; work with medical staff; salary $400 to start; retirement program; 41 hour week, 2 weeks' vacation. PO-28

ASSISTANT CHIEF PHARMACIST—315 bed community hospital located in N.Y. state; female preferred; 40 hours per week; three weeks' vacation. Salary open. PO-31.

ASSISTANT CHIEF PHARMACIST—181 bed general hospital; Calif. registration required; 40 hour week; two weeks' vacation; salary $450 to $500 per month. PO-32.

STAFF PHARMACIST—550 bed general hospital located in Ohio; registration required; 40 hour week; two weeks' vacation; salary $2.50 per hour or based on experience. PO-34.

STAFF PHARMACIST—259 bed general hospital; Virginia registration required; hospital pharmacy experience preferred; 40 hour week, 2 weeks' vacation; salary open. PO-35.

STAFF PHARMACIST—750 bed general hospital located in N.Y. state; B.S. degree required; hospital pharmacy experience desirable but not necessary; 40 hour week; two weeks' vacation; $450 per month. PO-36.

STAFF PHARMACIST—manufacturing, dispensing, inventory control and some supervision; registration in Tenn. required; salary $385.00 to $450.00 per month; 44 hour week; paid sick leave. PO-37.

STAFF PHARMACIST—prefer one or more years' experience, with at least one year internship; 42-hour week; 4 week-vacation; salary $450 month plus one meal; 660 bed teaching hospital. PO-38.

ASSISTANT CHIEF PHARMACIST—200 bed general hospital located in Tenn.; excellent opportunity for advancement; generous benefits; salary open. PO-39.

STAFF PHARMACIST—460 bed general hospital located in Mass. Prescription filling, some manufacturing. Two weeks' vacation; 40 hours per week, hospital employment benefits. PO-40.

STAFF PHARMACIST—2500 bed general hospital. Registration in Ohio required. Large O.P.D. some manufacturing. Hospital experience not necessary. 2 weeks' vacation; 40-hour week; salary $100 to $110 week. PO-41.

STAFF PHARMACIST—350 bed general hospital. Must be registered in N.Y. state and have B.S. 2 weeks' vacation; 44 hours per week; salary $4,680 to $5,500; hospital employment benefits. PO-42.

CHIEF PHARMACIST—120 bed general, non-profit hospital. Individual will have complete charge of ordering, dispensing and charging of medical supplies; also assist in general hospital purchasing. Either male or female; registration in Ohio required; experience in retail pharmacy given preference. Salary open; 40-48 hours per week; 2 weeks' vacation; other general hospital benefits. PO-44.

ASSISTANT CHIEF PHARMACIST—150 bed general hospital located in Midwest; 100 bed addition with outpatient service anticipated. Prescription filling and supervision of pharmacy aide; limited manufacture of nonsterile solutions. Registration preferred. Salary open; 40-48 hour week; sick leave and holidays with pay. PO-45.

ASSISTANT CHIEF PHARMACIST—For hospital described in PO-46. Must be capable of assuming complete responsibility in absence of Chief Pharmacist. Same benefits. Salary $4500. PO-47.

STAFF PHARMACIST—487 bed general hospital. Inpatient and outpatient prescriptions; manufacture of some injectibles. Male or female, will take recent hospital internship graduate with high academic achievement. 40-hour week, 2 weeks' vacation and other hospital benefits. PO-48.

STAFF PHARMACIST—480 bed general hospital must be eligible for registration in Ohio. Varied duties including stock control, purchasing, assisting in instructing student nurses in pharmacology. 40 hour week, 2 weeks' vacation, other benefits. PO-49.

STAFF PHARMACIST—300 bed general hospital. Inpatient orders—no bulk compounding. Must be eligible for Ill. registration. 44-hour week, 2 weeks' vacation. PO-50.

ASSISTANT CHIEF PHARMACIST—550 bed general hospital. Assume supervision of five pharmacists and two porters. Must have N.Y. registration. At least 5 years' experience in hospital pharmacy. 35-hour week, 2 weeks' vacation, other benefits. Salary $4500 to $5000. PO-51.

STAFF PHARMACIST—450 bed general hospital. B.S. in pharmacy, 1 year hospital pharmacy internship or one year's experience professional pharmacy, Col. licensure. 40 hour week, vacation —other benefits. Salary $383. PO-52.

CHIEF PHARMACIST—200 bed general hospital. Take complete charge of pharmacy, must be eligible registration in N. Mex. 44-hour week, two weeks' vacation, other benefits. Salary $475-$500. PO-53.

CHIEF PHARMACIST—325 bed private hospital. Position includes compounding, dispensing, manufacturing all types of pharmaceuticals. Must be eligible for registration in N. Car. Male or female, hospital experience desirable, but not necessary. About 45 hour week, 3 weeks' vacation, other benefits. Salary $450-$500. PO-54.

STAFF PHARMACIST—large university hospital located in East; opportunity for advancement. Salary $4500-$5500. PO-55.

PHARMACIST SUPERVISOR—2700 bed state mental hospital. Male; Va. registration required; minimum 1 year experience; ability to work effectively with professional staff. Merit increases; retirement benefits; vacation and sick leave with pay. Salary $5880. PO-56.

ASSISTANT CHIEF PHARMACIST AND STAFF PHARMACIST—335 bed general hospital located in Fla. Salary open. PO-57.

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